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January/February 2006

Amateur Radio

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WIRELESS INSTITUTE OF AUSTRALIA

The magazine for AUSTRALIAN radio amateurs

Foundation Licence opens doors for YOUNG AMATEURS

2005 Index

VK3FIRE VK3FNIK

Inside
- A "Simple Superhet" receiver for 80 and 40 m
- Making use of wireless LANs

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Our Cover this month

A nine-year-old girl, Janice Ampt VK3FIRE, has become the youngest person to qualify for an Australian amateur radio licence. Ten year old Nikolaas Dimitrijevic VK3FNI has also joined the ranks of those obtaining their amateur radio licence under the new entry level Foundation licence. See their stories on the inside back cover.

Contributions to Amateur Radio
Amateur Radio is a forum for WIA members' amateur radio experiments, experiences opinions and news. Manuscripts with drawings and/or photos are always welcome and will be considered for publication. Articles on disc or email are especially welcome. The WIA cannot be responsible for loss or damage to any material. A pamphlet, How to write for Amateur Radio is available from the National Office on receipt of a stamped self-addressed envelope.

Back Issues
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Photostat copies
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Disclaimer
The opinions expressed in this publication do not necessarily reflect the official view of the WIA and the WIA cannot be held responsible for incorrect information published.

Amateur Radio Service

A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

Wireless Institute of Australia

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Editorial comment

Peter Freeman VK3KAI

From AR reader to AR editor!

Several years ago, Colwyn Low VK5UE took up the task as Editor of AR at a time when many factors were uncertain. He indicated that he would take on the task for a year or so..... It is now some five years or more later. Colwyn is finally in transition – someone else has been convinced to tackle the task. Colwyn allowed me to "look over his shoulder" as he prepared his last issue – the December edition. He is now sitting back watching from a distance. He is also forwarding material that is sent to him. I am now coming to terms with a new role: a very big change from a reader of AR to the position of Editor.

We must all recognise and appreciate the very large task that Colwyn performed. The journal of the WIA was at somewhat of a crisis point when he accepted the role as Editor. Together with the members of the Publications Committee, Colwyn gradually moved the journal onto a more even footing. Just as he became reasonably happy with the state of the journal, the WIA itself was at the beginning of an eruption. The WIA began the preparation for and then implementation of a transition from a federal organisation with only seven members (the divisions) to a truly representative national body. All of this was occurring at a time when there were calls for substantial revision of amateur licence privileges and the introduction of a new entry-level licence to assist in a mooted resurgence of the hobby of amateur radio. Colwyn stood the course; he saw the journal through the changes and well beyond the establishment of the new national structure of the WIA.

We all face a significant challenge – how to maintain a good quality journal at the same time as having adequate content to educate our new colleagues.

Some 20 or so months after the reformation of the WIA from a division-based structure to a truly national body, Colwyn is finally able to step down. I personally convey my thanks to Colwyn for the role that he has played during his term as editor.

We have seen the review of the Amateur Service by the ACA (now ACMA), the dropping of the Morse code requirement and, recently, the introduction of the Foundation licence. We now have a tri-level service: Foundation, Standard and Advanced. It appears that the clubs, the WIA and ACMA are only just keeping up with demand for the new, simpler, entry mechanism to the Amateur Radio Service.

Some may question the new status. Many may consider that we are giving away a licence. As we saw in the December issue, our hobby was at a crossroad before the changes were implemented. Regardless of your own personal thoughts, I call upon you all to embrace the new structure and, more importantly, the new licensees as they become active.

This brings us to the state of YOUR journal – *Amateur Radio* magazine. Comments have been seen on Internet forums that certain overseas magazines are moving towards (or some would say have become) "comics". We all face a significant challenge – how to maintain a good quality journal at the same time as having adequate content to educate our new colleagues. In addition to providing further information to our new Foundation licence holders, we need to provide information to our new Standard licensees to assist them to consider their extended privileges. On top of these considerations, we need to maintain the interests of the many who have held licences for quite some time! After all, is not one of the key tenets of our hobby: that of self-improvement and self-education? The challenge for us all is to provide balance in the journal for all involved in the hobby. Our hobby is diverse. This diversity cannot be represented in any single issue of a journal such as this – it will be a challenge to give balance across any given year! If you think that our balance is "off", please help to correct it by making a positive contribution – preferably in the form of an article for publication!

I would ask all to note the new contact details for the Editor and for the Secretary of the Publications Committee.

Peter Freeman VK3KAI

Michael Owen VK3KI

The year ahead – more change?

In the WIA comment in December 2005 Amateur Radio, I discussed the coming into effect of the new Australian amateur licence structure, particularly the introduction of the Foundation Licence, and the responses of the WIA, the clubs and many individuals to the challenges that presented.

The introduction of the new licences is only one aspect of the implementation of the ACA's (as it then was) Outcomes of the Review of Amateur Service Regulation, published in May 2004. The implementation of the other changes was delayed to enable the earliest possible introduction of the new licences.

Let me identify some of the issues that may emerge in the coming months, as ACMA continues to consider the formulation of new regulatory provisions to give effect to the Outcomes.

But first, let us remind ourselves of the stated object of the proposed changes.

They were intended to:

"• update and simplify regulation of the amateur service;

- improve access to the amateur service;
- harmonise, where possible, licence conditions and qualification requirements with those of other countries; and
- maximise self-regulation within the amateur service."

The WIA has already advised ACMA that it does not agree with the retreat from the originally proposed power limits for the Standard and Advanced licences – see this month's "News".

Equally, and as a quite separate issue, the WIA, immediately on the release of the amending Determination to introduce the new licences, including the Foundation Licence, advised ACMA that it considered the 3 watt Foundation Licence power limit for CW, AM and FM unrealistic, given the availability of suitable equipment, particularly older equipment. We suggested a 10 watt power limit. We have had no response to that submission.

One issue that will be addressed is the whole question of the connection of amateur stations through the Internet, the use of technologies such as IRLP and Echolink.

Currently the Amateur LCD permits unattended operation for an amateur repeater station, an amateur beacon station, an amateur station using automatic mode (including, for example, packet mode and radioteletype mode) or an amateur station using computer controlled mode (including, for example, packet mode and radioteletype mode), to quote the relevant provision.

One matter dealt with in the Outcomes is the issue of the removal of the restriction on the connection of an amateur station to the public telecommunication network. How interlocked that is with connection through the Internet is clear – let me extract some quotes from the Outcomes:

Section 11 of the Amateur Determination restricts the connection of an amateur station to a public telecommunications network. The restrictions apply to automated systems where there is little direct licensee control, including an amateur repeater station, amateur beacon station, automatic mode and computer-controlled mode. ... The restrictions ... were originally put in place because, being automated, ... there is an increased risk that this may enable an inappropriately qualified amateur, in Australia or overseas, to gain access to privileges to which they are not entitled. This could also enable non-amateurs to have access ... to the Australian amateur bands. The ACA has decided to remove the current restrictions on the connection of an amateur station to the public telecommunications network. However, it will be the responsibility of the operator of an amateur station that is connected to minimise the possibility of non-amateurs gaining access to amateur bands through their station, via the network.

The WIA is conscious of the complexities created by the existing legislation, but believes that minimum regulation is appropriate, to encourage innovation and experimentation.

Look again at the objects of the changes as identified by the authors of the Outcomes that I quote above.

While the WIA has not adopted an inflexible policy position on these issues, our current position may be broadly stated as follows: Internet gateway nodes should be permitted to operate under either a repeater licence or a Standard or Advanced licence, with the repeater licence and unattended operation provisions of the Amateur LCD to be appropriately amended to make such use clear, the Repeater, Standard or Advanced licensee in each case to be deemed to "operate" the station and shall take responsibility for the transmission, and the licensees of the Repeater, Standard or Advanced stations providing an Internet gateway shall not allow the retransmission from a system that does not have reasonable safeguards to ensure that only qualified persons can use the system.

The WIA seeks less regulation, not more regulation, and where regulation is appropriate, simpler regulation. Quite consistent with the objects identified for the changes proposed in the Outcomes.

While it is not appropriate to revisit the fundamental policy decisions in the Outcomes, if you have a view as to how any aspect of the Outcomes can be better implemented, please let us know, by mail or better, by email to either president@wia.org.au or secretary@wia.org.au.

We would appreciate your input.

The Outcomes included the following statement:

The discussion paper offered the possibility for an amateur registration body (ARB) to manage amateur examinations, certificates and callsigns (and, if class licensing were to proceed, station location information). Examination management is currently delegated to the WIA.

Essentially that means that the role of the WIA to manage examinations is open to review, with the possibility of what is called an ARB.

The conclusion of the Outcomes is:

continued on page 5

WIA news

WIA requests ACMA to adhere to power limits proposed in Outcomes.

In May 2004 many amateurs welcomed the proposed changed power limits for modes other than SSB that were contained in the summary to the ACA's Outcomes of the Review of Amateur Service Regulations paper. The permitted power limits specified 10 watts PEP all permitted modes for Foundation licensees, 100 watts PEP for all permitted modes for Standard licensees and 400 watts PEP all modes for Advanced licensees.

While Australian amateurs have lower power limits than amateurs in many other countries, the move to a PEP power limit for all permitted modes at least would have given Australian amateurs the same privileges as enjoyed by amateurs in the UK and New Zealand.

Last year ACMA advised the WIA that the proposal to specify transmitter output power only in terms of Peak Envelope Power would not go ahead. ACMA said that the change was due to "concerns about the potential for increased human exposure to electromagnetic radiation and increased interference resulting from what would be an effective increase in transmitter power output for some emission modes".

The WIA addressed the 3 watt power limit for AM, FM and CW specified for the Foundation Licence immediately the amending Determination was published, proposing a 10 watt limit to enable the use of readily available commercial equipment, particularly older equipment.

The WIA Board has now given careful consideration to ACMA's change of position in so far as it affects Standard and Advanced licensees, and has written to ACMA saying that the WIA believes that ACMA should not retreat from a better solution for amateurs as originally offered in the Outcomes paper.

New WIA DXCC Awards

The WIA Awards Manager, Malcolm Johnson VK6LC, has announced two new DXCC Awards, replacing the old Federal Award certificates, so now there is a final and complete National WIA DXCC Awards series.

The awards are free to all WIA members, the achievement labels are at WIA cost and full details are under "Awards" on the WIA website.

Canadian amateurs to lose 220-222 MHz

Barring an outpouring of "compelling arguments to the contrary", Industry Canada will reallocate the 220-222 MHz portion of 220-225 MHz from the Canadian amateur service to the mobile and fixed services. Under the provisional reallocation, which was scheduled to take effect January 25, the amateur service will be allocated the 219-220 MHz sub band on a secondary basis. Additionally, the amateur service may be permitted use of 220-222 MHz "in exceptional circumstances on a secondary basis to assist in disaster relief efforts".

WIA calls for comment on single letter suffix callsigns

The WIA board has received some requests for the introduction of single letter suffix amateur callsigns (eg. VK4D, VK2A, etc). Single letter suffix callsigns with a VK prefix are currently assigned to scientific licences, and reallocation may not be possible.

On the other hand, some have argued that single letter suffix callsigns are elitist and thus not in the spirit of amateur radio. However, some 44 other countries issue these callsigns to amateur radio stations.

The WIA Board therefore seeks views on the desirability of the WIA seeking single letter suffix callsigns for Australian amateur radio stations.

Good news on 40 and 80 m wideband noise problem

WIA Director and National IW Coordinator Glenn Dunstan VK4DU announced some good news on the 40 and 80 m wideband noise problem.

"ACMA advise that they have DF'd the noise to a location on the Chinese coast. They have been liaising with the Chinese Administration to have the interference removed. The Chinese Administration has assured ACMA that action will be taken."

Glenn thanked the many amateurs who have submitted reports on this problem. He asked that reports keep coming to intruders@wia.org.au.

Radio pioneer remembered

December marked the 100th anniversary of one of the most significant events in the history of amateur radio. One day in December 1905, an engineer at a receiving station based at Machrihanish in Scotland was listening in when - to his astonishment - he heard the voice of Reginald Fessenden. What made this so special was that Fessenden was at the time in North America - this was the first time that a voice transmission had been copied across the Atlantic.

Remarkably, it was purely by accident. Fessenden - a talented if eccentric Canadian scientist - had actually been talking to another station in Maryland, USA but, thanks to the wonder of propagation, his signal made its way across the Atlantic.

Thanks to the RSGB

Mid December sees 36 clubs offering Foundation Licence Training and Assessment

By 14 December 2005, thirty-six clubs had advised the WIA that they are offering training and assessment for the Foundation Licence, one in the ACT, nine in NSW, seven in Victoria, seven in Queensland, eight in South Australia, two in Western Australia and two in Tasmania.

Many of the clubs listed have already commenced training and assessment and it is expected that several additional clubs will be offering training and assessment early in the New Year.

The list of clubs offering Foundation Licence training and assessment can be found on the Foundation Licence information pages on the WIA website.

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New editor of *Amateur Radio*

WIA President Michael Owen, VK3KI, recently announced that Peter Freeman VK3KAI had been appointed by the WIA Board Editor of Amateur Radio, following the retirement of Colwyn Low, VK5UE.

Peter is a Lecturer in Bioscience and Biology, School of Applied Sciences & Engineering, Monash University. Since moving to the Latrobe Valley in 1987, Peter has been heavily involved in the committee of the Eastern Zone Amateur Radio Club, currently serving another term as President, and initiated in 1998 the very successful annual GippsTech Conference, and is both chair of the Organising Committee and Editor of the Proceedings.

Colwyn has been Editor of Amateur Radio since 2000, when he took over from Bill Rice, perhaps as a "fill-in" for one year. He has been trying to retire for a long time!

Michael said "In welcoming Peter and saying how delighted we are that he has accepted this very important and onerous position, we must also pay special tribute to Colwyn.

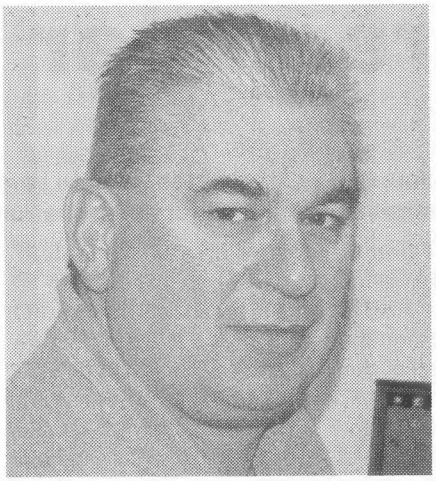
"We now live in a world where people get WIA information from different sources, the WIA broadcast, the WIA website and the WIA magazine, *Amateur Radio*. But what makes AR different is firstly that it gets to almost every member, and what is published can be more detailed than just a 2 minute grab, and secondly, the magazine can be the source of long value technical information. We certainly hope that Peter, with his background of technical publication will bring his particular expertise for the long term benefit of amateur radio.

"I have had the privilege of attending many Publication Committee meetings with Director Ted Thrift VK2ARA, with Ted on the phone from his home near Wollongong and with Colwyn on the phone from Adelaide.

"I therefore know how much work our Publication Committee members undertake, and also, both from attending those meetings and also, as a sometime errant contributor to the magazine, how important the Editor's contribution really is.

"In particular, Colwyn has seen his role as much more than the mouthpiece of the WIA, contributing to reasonable and rational discussion. Colwyn has wanted to retire well before the new Constitution was adopted, but has given the WIA in whatever form his continuing support.

"I am confident that the transfer of responsibilities from Colwyn to Peter will be orderly. Again, I thank Colwyn for his contribution to the journal," said Michael.



Peter Freeman VK3KAI

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WIA comment *continued*

The ACA has decided to proceed with the outsourcing of amateur certificates and callsign management. Outsourcing the issue of certificates is consistent with the recommendation made in the Productivity Commission's Radiocommunications Inquiry Report that the ACA delegate the conferring of certificates of proficiency for amateurs.

It has been made clear to the WIA that its role in relation to amateur examinations is now subject to a new tender process.

Let me say this.

Whatever is the end result of the ARB proposal (a role that the WIA believes it can, and should, fulfil), the WIA firmly believes that the only acceptable outcome is for the WIA to continue to manage the amateur examinations in Australia. We shall be doing all we can to ensure that is the outcome.

So, 2006 will, again, be a year of challenge for the WIA.

ar

WANTED

Suitable cover photo for the 2007 WIA Call Book

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or email to: callbook@wia.org.au

Correction

Several errors were made in the production of the article "The VK5BR-X antennas - some modified ideas" by Lloyd Butler VK5BR. Some images are missing and some figures have incorrect captions. The editor and Publications Committee extend our apologies to Lloyd. The article will be republished in a forthcoming issue.

A "Simple Superhet" receiver for 80 and 40 m

Drew Diamond VK3XU
Photos: Andrew Diamond.

Some ideas are just too good to ignore. Back in 1994 I began experimenting with a scheme for a two-band receiver which had, for its inspiration, a bright idea in an old issue of QST magazine (Ref. 1).

Byron Goodman's original "SimpleX" band-imaging receiver used an IF of 1.7 MHz, and a local oscillator VFO frequency of 5.2 to 5.7 MHz, where reception of 3.5 to 4 MHz is had by 5.2 - 1.7 = 3.5, and 5.7 - 1.7 = 4, and reception of 6.9 to 7.4 MHz is had by 5.2 + 1.7 = 6.9, and 5.7 + 1.7 = 7.4, resulting in both bands tuning in the same direction. Neat but not gaudy.

Working with present-day devices and circuitry, an IF of 2 MHz was chosen (rather than 1.843 MHz, where the second BFO harmonic would put a spurious signal on 3.686 MHz) to make use of a filter made from bargain surplus crystals. Like many seemingly simple ideas, this one initially had some serious drawbacks. Firstly, conventional 2 MHz same-crystal ladder filters, although splendid for CW, were found to be too narrow for SSB. Moreover, VFO and BFO harmonics mixed to produce rather too many internal spurious signals. Strong local broadcast and TV transmitters were also getting in on the act and complicating things further.

So the project languished in the "too hard basket" for several long periods between fruitless attempts at solving these problems. 2 MHz ceramic resonators seemed to offer some promise, but their bandwidth was found to be far too wide for good CW and SSB selectivity.

Further experimental effort was applied to the crystal filter dilemma. All known circuit configurations were tested, always resulting in a band-pass too narrow for good SSB (there seems to be a "break-point" where ladders using, say, identical 3 MHz crystals yield quite acceptable SSB bandwidths, whereas it appeared to be impossible for 2 MHz crystals). Finally, a simple filter containing two parallel pairs of same-frequency crystals was tried, which gives a 6 dB bandwidth of about 1.5 kHz. Too narrow for SSB? Not at all - recovered SSB and AM audio is good, and excellent single-signal CW reception is obtained.

Photo 1 - "Simple Super" Receiver.

Careful attention to VFO and BFO injection levels eliminated all but one of the internal spurious signals, the remaining birdie being on 3.0 MHz (or 7.0 MHz), and is equivalent to just 0.1 micro volt. Further work on the input band-pass filter has resulted in a configuration that admits only the wanted band (3 to 3.8, or 7 to 7.8 MHz).

The prototype model is what may be called a "sweet" receiver, and is a delight to use. Sensitivity is better than 0.3 µV for 10 dB S + N:N. Reception modes are LSB, USB, CW and AM (as SSB). Rejection of the "unwanted" band is 50 dB. IF (2 MHz) rejection is 50 dB. Both bands tune in the same direction, where the 100 kHz dial calibrations align for both bands.

Circuit

See Fig 1. Of the various LC band-pass filter configurations tried, the bottom-coupled arrangement was found, by experiment, to provide the least insertion loss consistent with greatest rejection of out-of-band signals (strong local BC and TV/FM being the most problematic). The input is simply tuned, or "peaked", to provide reception of either 3 to 3.8, or 7 to 7.8 MHz signals.

The first mixer is a ubiquitous NE602 balanced mixer chip, where a separate VFO, adjustable from 5.0 MHz to (about) 5.8 MHz, is applied to the OSC pin 6. To produce an IF of 2 MHz, 5 - 3 (and 5.8 - 3.8) = 2 MHz, and 7 - 5 (and 7.8 - 5.8) = 2 MHz. One VFO, two bands!

After negotiating the crystal filter, the signal is presented to the input of a second NE602 as a product detector. A BFO signal at either 1.999 MHz or 2.001 MHz is applied to the oscillator port: pin 6. Rather than simply using the internal oscillators provided within the NE602, internal spur production is greatly reduced by having separate oscillator devices for VFO and BFO. It is quite difficult to "pull" a 2 MHz crystal very far from its nominal frequency, so separate optimised crystal oscillators are used to "straddle" the filter's response,

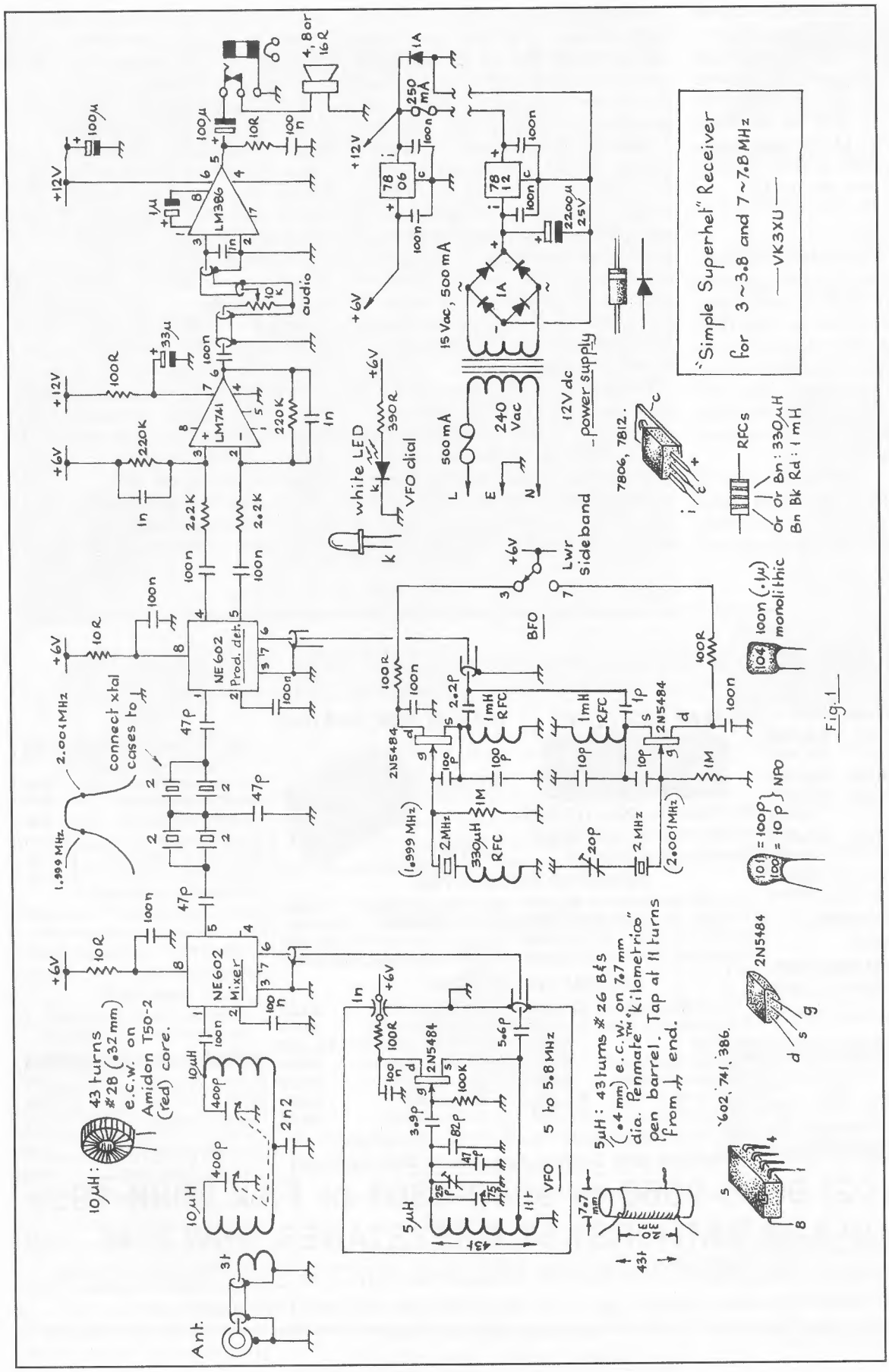

Fig 1 – Circuit of the "Simple Superhet" receiver.

and thus obtain switch selectable USB or LSB detection, as illustrated in Fig 1.

Product-detected audio is amplified to speaker (or head-phone) level with an ordinary LM-741 and LM-386 combination. The 220 kΩ feedback resistors around the LM741 each have a parallel 1 nF capacitor to give a gradual roll-off upwards from about 5 kHz.

Construction

My home-made aluminium case shown in Photo 1 measures 190 mm x 190 mm x 90 mm, but any similarly sized metal or plastic box would serve. The 12 V dc power supply may be internal or external, as desired. A suitable power supply circuit is included in Fig 1. All connections on the 240 V ac side of the transformer MUST be suitably covered to prevent accidental contact.

A suggested "paddyboard" (Ref 2) layout is depicted in Fig 2 and Photo 2, although any preferred construction style, ugly or neat, may be employed, provided that signal-carrying wires and leads are made as short as practicable, and a "copper side up" ground-foil is used. Note the shielded wire connections for the antenna input, 10 kΩ audio potentiometer and oscillator outputs.

Main circuit board may be single or double-sided measuring 180 mm x 170 mm. The VFO is housed in a printed circuit board box measuring 80 mm x 58 mm x 50 mm LWH, made from single-sided board material soldered together, as described in Refs 3 and 4. Four brass nuts may be soldered at each corner for fixing a PC lid, in which a hole must be provided to admit a tweaking tool for the 25 pF beehive capacitor.

The four ICs are accommodated in 8-pin sockets, which, in turn, are soldered into 4-strip x 25 mm "substrates" of Vero board material, copper upwards. A single saw-cut is made down the length of the substrate to isolate the pins either side of the chip. When soldering the socket, take care that the pins do not poke right through and risk shorting to ground foil. The substrates may be fixed to the main board with a tiny dab of super-glue, as described in Ref 2.

If you have a crystal checker and a precise frequency meter/counter, test your crystals, then select the lowest frequency unit for the 1.999 MHz BFO, and the highest one for the 2.001 BFO (my crystals had a "spread" of about 200 Hz).

Frequency coverage (for each band) is 800 kHz, so some kind of reduction drive and dial is required. Most constructors have their own ideas about dials, so just a few words about mine. An ordinary 6:1 (I would have used a 36:1 if available) planetary drive is fitted to a right-angle PC bracket (visible in Photos 2 and 3). A flexible coupler should be fitted to take up any small misalignment between capacitor spindle and drive.

A 70 mm diameter disc of opaque 3 mm Perspex is attached to the dial drive, upon which rub-on letters have

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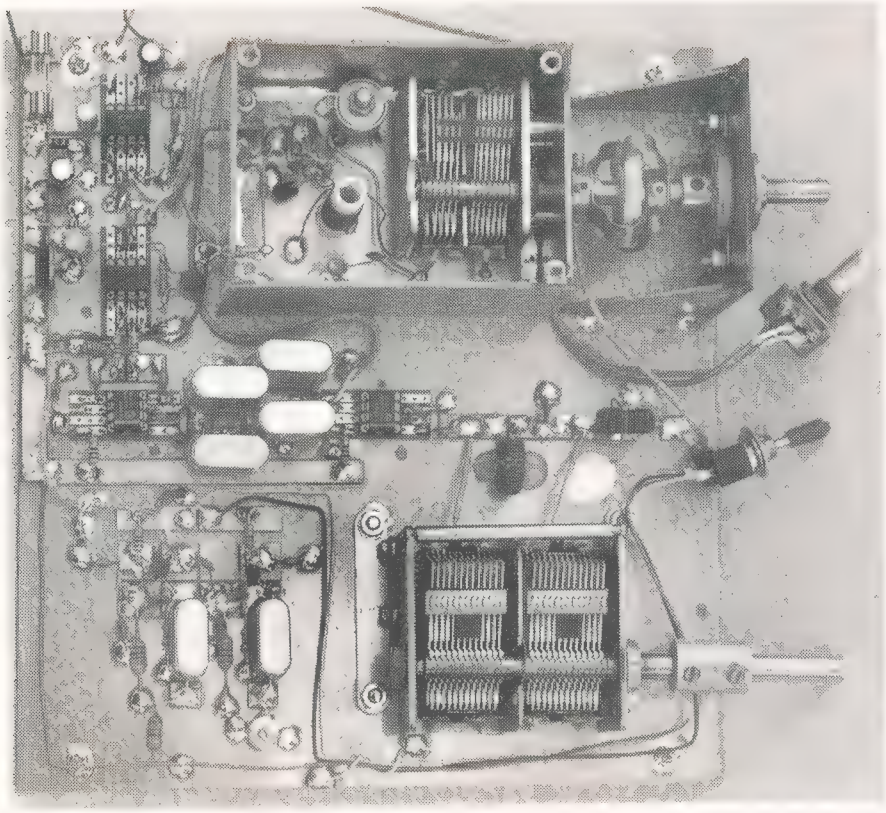

Photo 2 - Circuit board layout.

been applied (at calibration) to indicate each 100 kHz division. A similar sized disc of 3 mm clear Perspex has a single line scribed upon the inside to act as the cursor. The disc is a "nice" bung fit into an exact same size hole in the front panel. Dial calibrations may be illuminated from behind with a bright white LED, positioned such that it radiates through the opaque disc.

Operation

Do a thorough part location and polarity check. Pay particular attention to the ICs.

With the audio potentiometer at minimum, apply 12 Vdc. You should hear just a soft hiss as the pot is advanced. Swing the input filter cap through its full range, whereupon you should perceive two distinct noise peaks, which shows that the set is "gainy" and probably working. The two input tuned circuits are slightly "over-coupled" on 3.5 MHz, and slightly under on 7 MHz, so you may find two close peaks on 3.5 MHz.

If a signal generator is available, set it to 2.995 MHz initially at a signal level of about 1 µV. Adjust the VFO frequency and input capacitor to obtain a signal. Now adjust the 25 pF VFO trim capacitor so that bottom 3.000 MHz band-edge is at (or near) maximum capacity (full mesh) of the VFO capacitor. The birdie on 3.0 or (7.0) MHz should be the only internally

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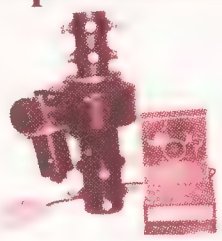

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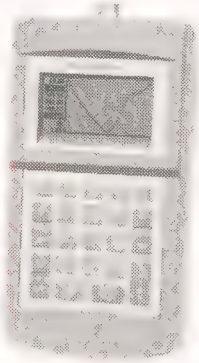

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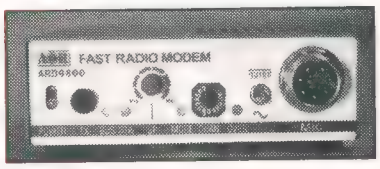

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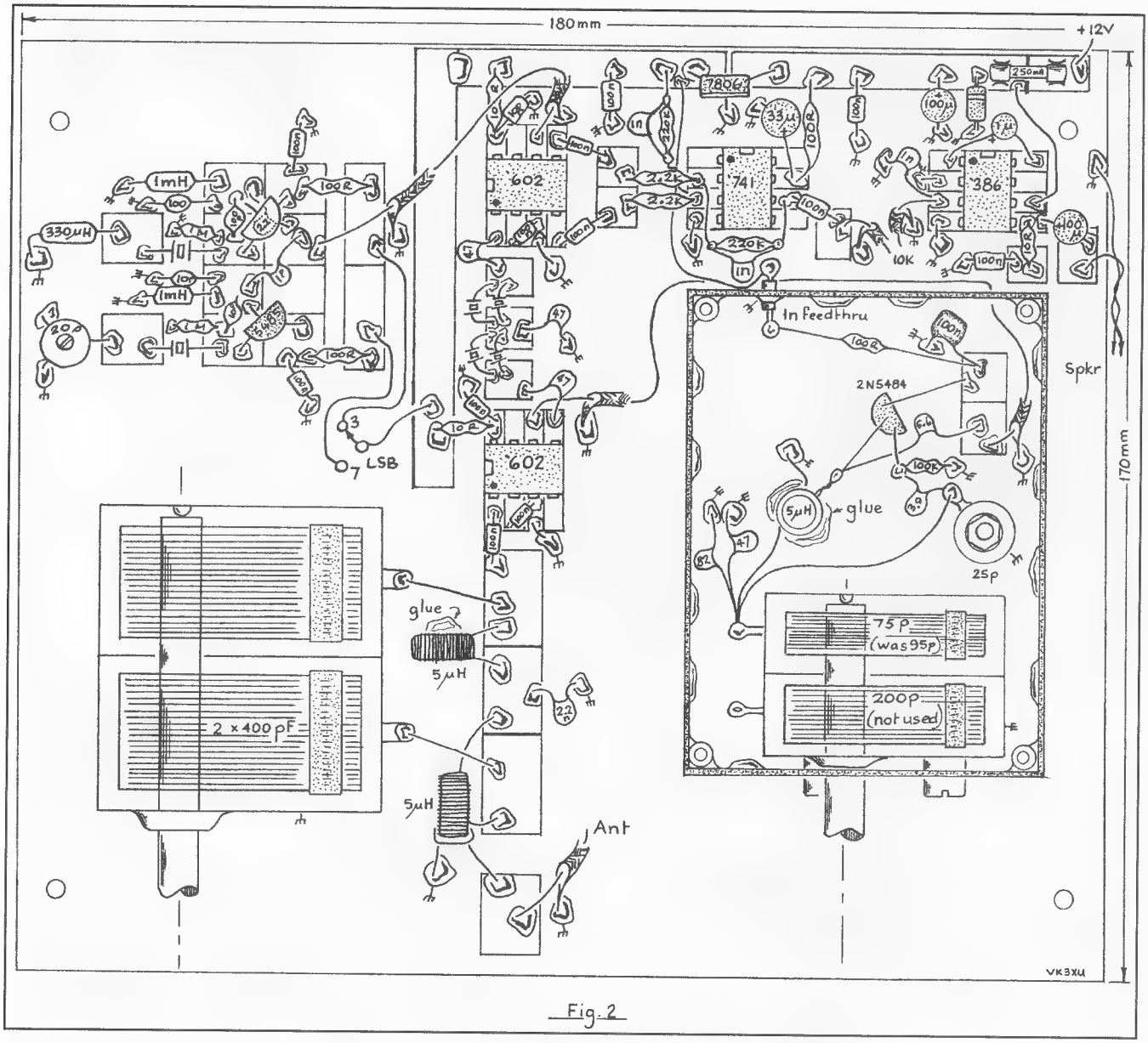

Fig 2 – Suggested "paddyboard" layout for the receiver.

generated spur audible.

When the input capacitor is peaked, the received signal level should be quite strong. If your generator will go down to 0.1 µV, observe that this level is easily detectable.

With the lower sideband switch (LSB) in the 7 (MHz) position, single-signal selectivity should be very good. That is, there should be only one "beat-note" as you tune through the signal. The crystal filter's response is somewhat less than ideal where the BFO crystal lies at 1.999 MHz (about as low as it can be "pulled") to provide LSB reception on 3.5 MHz.

Connect an antenna and tune in a SSB signal. On 7 MHz, adjust the 20 pF trimmer for best sounding resolved sideband (probably near minimum capacity). On 3.5 MHz, check that LSB signals can be readily resolved.

For CW work, you may find that the "7" position of the LSB switch provides best selectivity for that mode.

Parts

The ordinary electronic components may be purchased from our usual electronics suppliers, including Altronics, DSE, Electronic World and Jaycar. NE602s may be mail-ordered from Ocean State Electronics (http://www.oselectronics.com/). The 25 pF air-spaced beehive trimmer for the VFO and 1 nF feed-through capacitor are available from Electronic World (03 9723 3860). See Hamads in Amateur Radio for your local Amidon supplier.

The variable capacitor for the VFO may be any well-made unit of about 75 or 80 pF maximum capacity (one of those excellent English Polar, dual ball-bearing, 80 pF capacitors would be ideal). An ordinary locally-made, ubiquitous MSP 95 + 200 pF capacitor must have two of the moving plates removed from the 95 pF (rear) gang to give the required value. With a hacksaw (jewellers saw) carefully cut through the phenolic insulator in two places. Apply a firm pull with long-nose pliers and

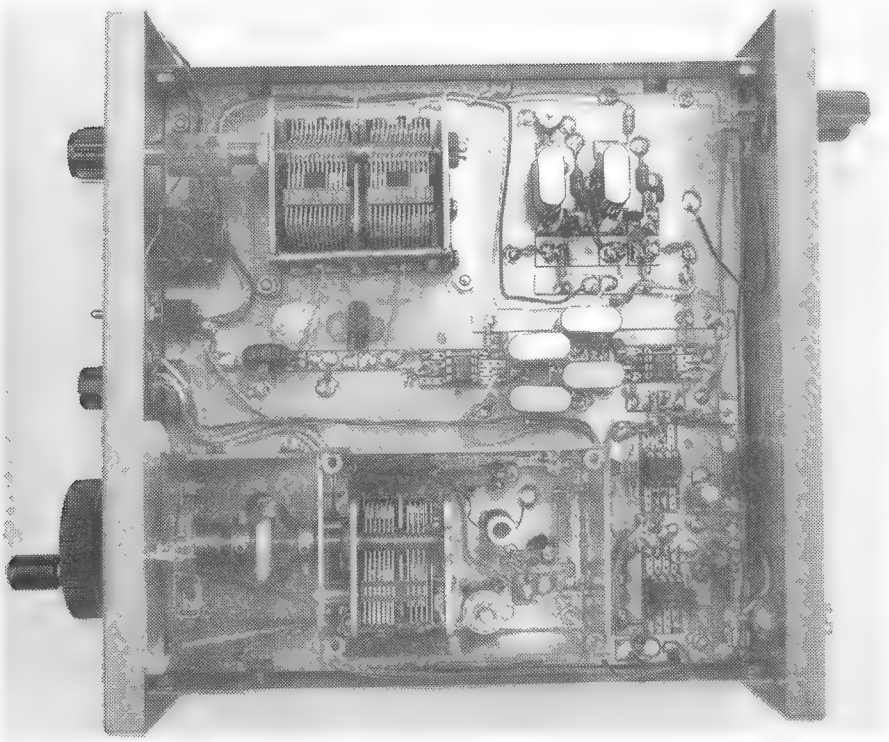

Photo 3 - Plan view.

thus singly extract two plates.

MSP capacitors and Roblan RMG-2 two-gang 415 pF capacitors are often available at ham-fest/swap-meets, etc. For the input filter, any dual-gang of (about) 400 pF capacity will serve, but the gangs must have the same value. If you have trouble finding suitable units locally, have a look at the Antique Electronic Supply web site at http://www.tubesandmore.com/

My 2 MHz crystals (P/N 10240) were purchased from Rockby Electronics (http://www.rockby.com.au/). Minimum quantity of crystals purchased is 10 units at a cost of 20 cents each plus postage etc. If you have genuine difficulty in locating a specific item or two, please telephone, or drop me a line (QTHR). I usually have spares on hand, or can suggest a source.

References and Further Reading

1. "The "SimpleX Super" Receiver"; Goodman, W1DX, QST, Dec. 1958, pp 11 - 14 + 178 + 180.
2. ""Paddyboard" Circuit Construction - Revised"; Amateur Radio, May 2005.
3. "An Attenuator Set for Receiver Sensitivity Measurements"; Amateur Radio, August 1999.
4. "An Easier Way to Build PC Board Enclosures"; Kopski, K3NHI, QST, September 2003.

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The VK5BUG "Black Stick":

a cocktail of 75 ohm transmitting twin-lead and a multi-band HF vertical aerial.

David 'Doc' Wescombe-Down PhD MACE
VK5BUG (ex VK7CQ, VK5HP & VK4CMY)

No base loading – no capacity hat wires – no traps – and it works really well!

Purists of the RF-world please be patient and accommodating: some of us want to build an aerial that works well rather than discuss the theoretical reasons why it might not! Although the recipe differs substantially from the usual mix, this home-spun vertical works really well on 80, 40, 20 & 15 metres, which are my HF bands of choice at this time. I have experimented extensively with a number of versions of this aerial since 1993 (Wescombe-Down, 1994a; 1994b) using RG58, RG213, RG8, 450 ohm TV ladder-line and 75 ohm transmitting twin-lead to feed the variants. In all cases, they have performed well for both local and DX work using low and medium power levels, but without exception, those verticals fed with 75 and 450 ohm balanced feed-lines have been better in terms of both minimum SWR and maximum output power.

I also acknowledge the similar work done by Gillespie K4TP (1978, pp. 19-20) who gave me the original idea to work with.

The setting for this current project is an inner-city suburban block with the aerial ground-mounted about three metres from a large steel workshop shed that also houses the Wireless Office (we old sea-dogs are a worry with our terminology!).

The radiator is 10.08 metres of telescoped aluminium tubing commencing with 50 mm diameter for the base section. Over the years a number of well-intentioned people have tried to assure me that conductor diameter makes no difference with HF vertical aerials as far as radiator length and/or performance is concerned, and I thank them for their input, but practical construction and operation of more than 20 such aerials has shown otherwise. I have built verticals from wire, soldered baked bean cans, metal down-pipe, TV ribbon, ladder-line and metal tubing, from a quarter-wave length at 3.5 MHz down to a quarter-wave at 28 MHz, and in every case there has been some noticeable and measurable differences between the thin wire and 75 mm tubing used at any particular frequency.

Anyway, the base section of Black Stick has a 2.4 metre PVC storm-water pipe insulating sleeve, slotted along its entire length to allow compression by three U-bolts which secure the radiator to a three metre length of 75 by 40 mm treated pine, which in turn is bolted to a three metre length of 75 by 40 mm galvanised RHS concreted into a 600 by 600 by 600 mm concrete cube in the ground. That summarises the vertical bits! (Figure 1)

Two scrap lengths of 12 mm copper pipe, ex-bathroom renovations, were folded into L-shapes and soldered together to form a rectangle about 300 by 250 mm. This has been mounted horizontally and below the lower end of the radiator base tube section and I have soldered 24 radials to it. These are all heavy copper wire (some insulated and some not) fanned out in lengths to suit the compact surroundings and buried about 25 mm beneath the lawn and paths. The radials range from 2.4 to 20 metres long and some are not at all linear. Four counterpoises are also used: two of 10 metres and two of 20 metres, and these are woven through existing pine trellis or laid around the perimeter of the ten by four metre shed. Three 1.8 metre copper-clad earth stakes have been used: one at the aerial base and two at the shed wall where the main equipment earthing bus-bar exits the building. The areas where the stakes have been installed, is always kept wet, if not soggy. The steel shed is bonded to the system, as are two of the three neighbours' tennis court mesh surrounds: amateurs make the most of what is at hand! (Figure 2 schematic)

Obviously one of the twin conductors in the feed-line is connected to the aerial base and the other to the copper pipe rectangle with its attached radials. The 75 ohm Belden 8222 twin-lead has been routed as directly as possible, with only one obtuse angle bend near each end and is connected to an Emtron EAT1000A matching unit for post-installation testing. The main station rig is a Ten Tec "Century 21" CW transceiver rated at 70 watts DC input, with a Yaesu FT75 (60 watts) and Oak Hills Research "Classic 2080" 5 watt QRP CW transceiver also in train. What goes on is monitored by a Heathkit SB614 station monitor and my symbiotic companion of 40 years, a Vibroplex "Champion" speed-key completes the circuit.

"To-air" results using the "Century 21" are:

Band	SWR	Watts (out)
3.5	1.1:1	40
7	1:1	45
14	1.2:1	40
21	1:1	25

all of which are as good as one could expect with the equipment used.

On air reports (VK3XU, VK3IM, et al) have been very encouraging and support the effectiveness claims attached to this quite basic aerial.

I took the time to clean and use conductive paste at every metal-metal join in the radiator; solder all connections including joins in radial wires; prepare, prime and multi-coat paint the aerial and its support structure (gloss black of course!); and replace the twin-lead with RG58 to enable immediate comparisons to be done: the coax is still in place (disconnected) buried in 12 mm garden hose routed into the shed. On test with the identical

set-up, but using the RG58, 38 watts out and 1.25:1 were the best figures that could be obtained (7 MHz). However, an acceptable match and output power level could not be achieved on 3.5 or 14 MHz, remembering that any matching unit is only trying to get a rig to look at a 50 ohm resistive load where it meets the coaxial cable.

Three polypropylene guys spaced at about 120 degrees help with aerial security and a treated pine trellis surround, with lift-out 1800 by 600 mm front section for aerial base access, has been constructed to keep grand-children and other wee-beasties away safe from the RF hot potentials.

So much for the operator's-eye view of the Black Stick, and now for some rhetoric on the theory!

Belief in such a simple aerial concept only requires some minor paradigm shifting, so pop these two in the "Baloney Barrel" at your place:

- You can't use parallel-conductor feeders with ground-mounted verticals and expect them to work well, and
- The feed-point impedance of a ground mounted vertical means you must have some kind of electrical compensation, either by loading or increased radiator length in order to achieve a decent match in multi-band use.

Of course there must be a mismatch between the feed-line and the radiator in my Black Stick, but RF loss from such a line, even if it showed an SWR of 25:1 up at 28MHz, would still be less than the loss in RG58 coax when the latter is matched!

Worth noting is that the sole purpose of the feed-line is to convey RF from the matching unit output to the aerial feed-point, including radials, as efficiently as possible. Given the very small conductor separation compared to the highest frequency of intended use, the ARRL recommendations in this regard have been complied with (1994, p. 24-1). The feed-line has also been kept as short as possible, and is less than seven metres long, in fact.

Usually with twin-lead feeders, we try to ensure each conductor "sees" the same RF pathway, and balancing the radial lengths to the radiator length is the norm. In the case of Black Stick, this is the one area of particular and intentional compromise, based on four decades

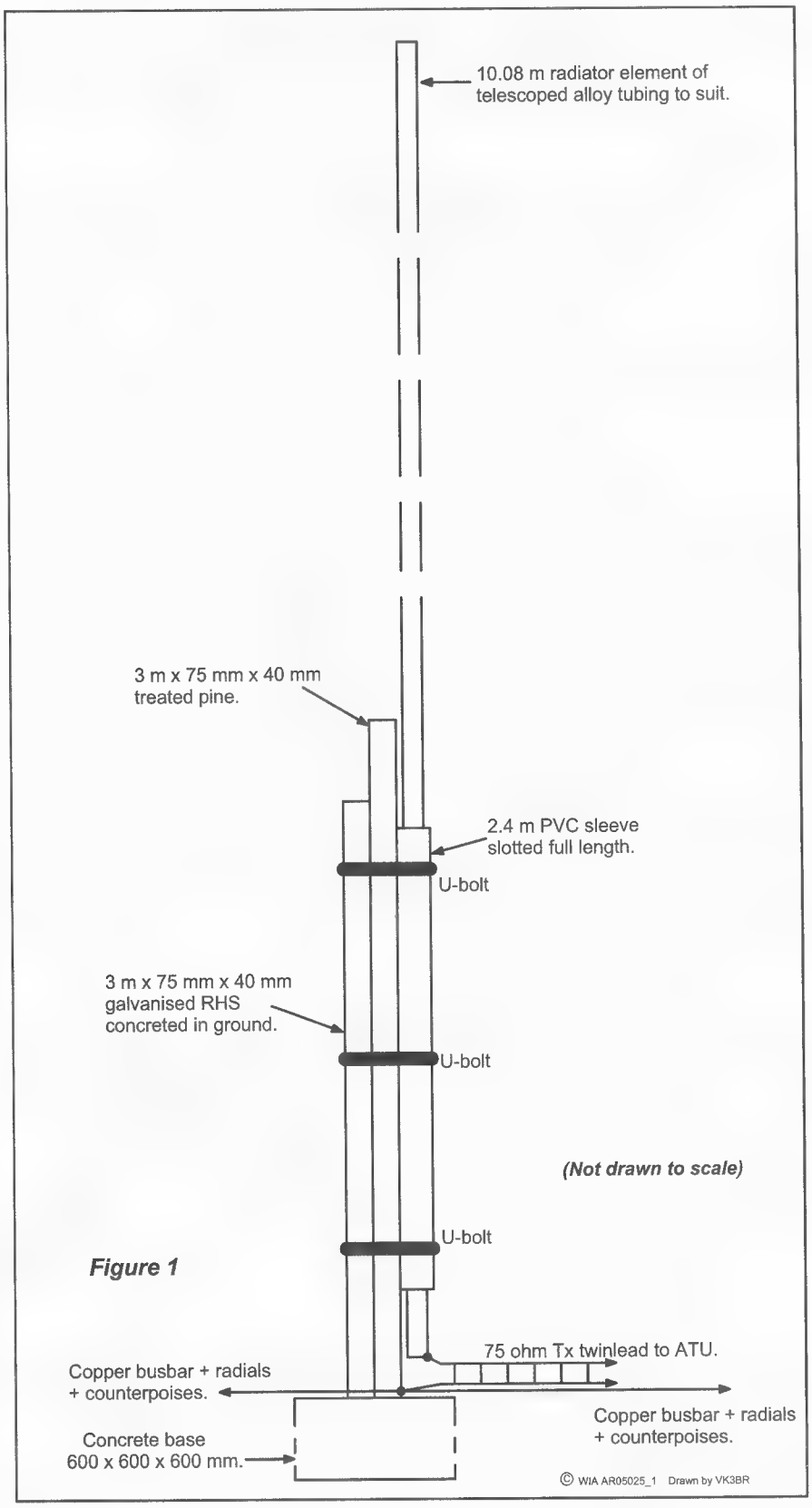

Figure 1

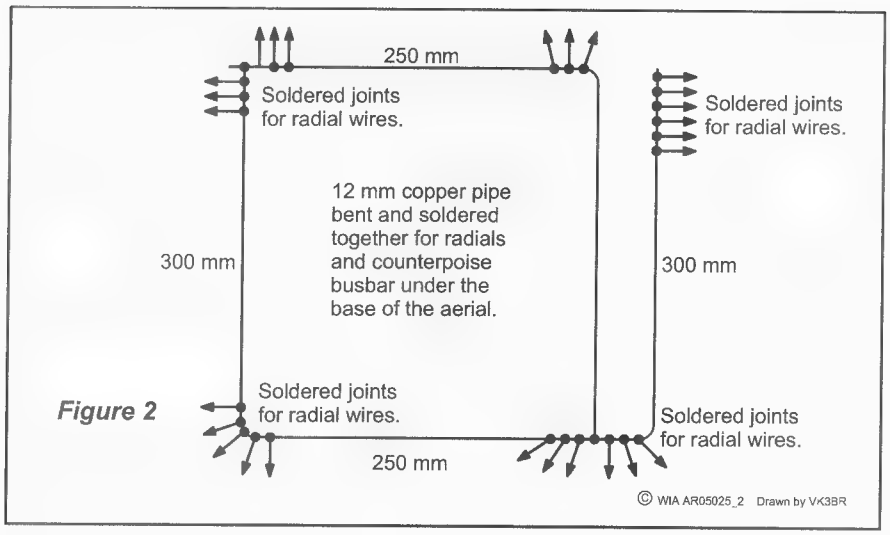

Figure 2

experience of building and operating vertical aerials, in that as much effort as possible has been put into the extent of the radial system at the expense of this "balancing act". Therefore, I acknowledge that provision of ground current pathways was more important from an operational perspective than physical exactness of radials:radiator length relationships. Nothing arising from the operation of Black Stick indicates that this was a poor decision.

Transmitting-type 75 ohm twin-lead has two heavy, multi-strand conductors and a dense dielectric medium. The close spacing confines most of the RF field within the dielectric, with very little "at large" in the surrounding environment. This ensures that this type of feed-line is much less susceptible to weather influences than ribbon feeders (ARRL, 1994, p. 24-15). Velocity factors of the twin-lead and RG213 are very similar (67% versus 66%) and the capacitance of each is 19 versus 30.8 pF per foot respectively.

Wall feed-through points for balanced feed-lines need a long leakage path (ARRL, 1994, p. 24-23) and I used an insulated plate providing at least ten times the feed-line cross-section at any point where it entered the shed wall. Such feeders need to be kept away from conductive objects by at least three times their cross-sectional dimension, and bends of less than about 120 degrees are to be avoided because they will alter the characteristic impedance of any feed-line. Power reflections will occur at each bend otherwise (De Maw, 1988, p. 38).

I spent several weekends building and installing this aerial and then burying the "radial farm", but anyone who hasn't got six children, several grand-children, lots of dependent pets, four other hobbies and full-time study commitments, could have a Black Stick up and running much quicker than that. My "Residential Contessa" prefers the gloss black finish, as do my neighbours, and it has actually grown on me too!

My thanks go to Harry W3FM for sending me the Belden twin-lead, George VK5ALS for donating the "Century 21", Joan VK5KYO for getting it to run so sweetly, Tim VK3IM and Drew VK3XU for their on-air feedback, Ingrid (my "Residential Contessa") for being the second pair of hands during the installation, and everyone else who has shown an interest in the concept and project.

Go ahead, throw away some of the theory and build an aerial that really works! Whatever you do in amateur radio, have fun, because we are not here for a long 'sked'.

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De Maw, D. (1988). *Novice Antenna Notebook,* (1st edition). Newington, CT: The American Radio Relay League.

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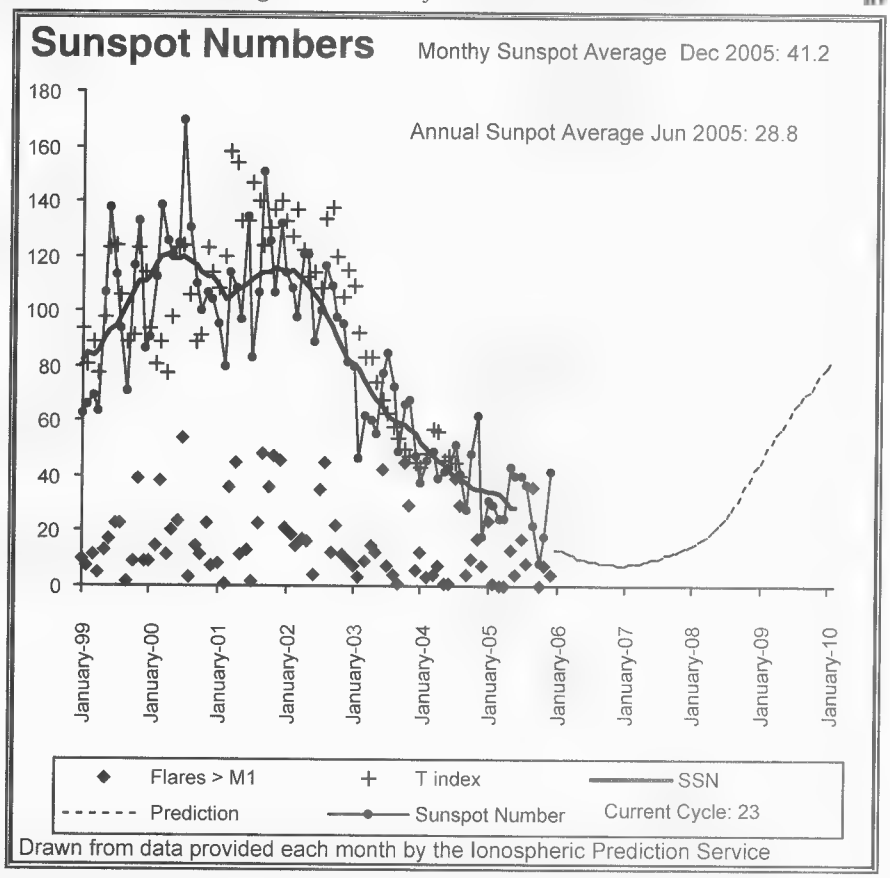


CW identification board

James Cutler VK2TIM

Radio amateurs will find many uses for this little unit. Here is the circuit diagram, circuit description and source code for the CW ident board. I also have a PCB done for this project, but I would think that most hams would want to build this project onto Vero board, as PCBs are costly to make or have made.

Circuit Description

The heart of this circuit is a 16F84A PIC (U1) microcontroller, running at 4MHz, as determined by X1, a 4MHz Parallel cut crystal. The PIC is supplied with its supply rail thanks to U2, which drops the 12V (9 – 15V) supply from the outside world down to 5V. Pin 4 (The /MCLR pin) is held in a high state by R2. No external reset circuitry is required as the PIC has internal power on reset functionality.

Now, down to what the circuit is doing:

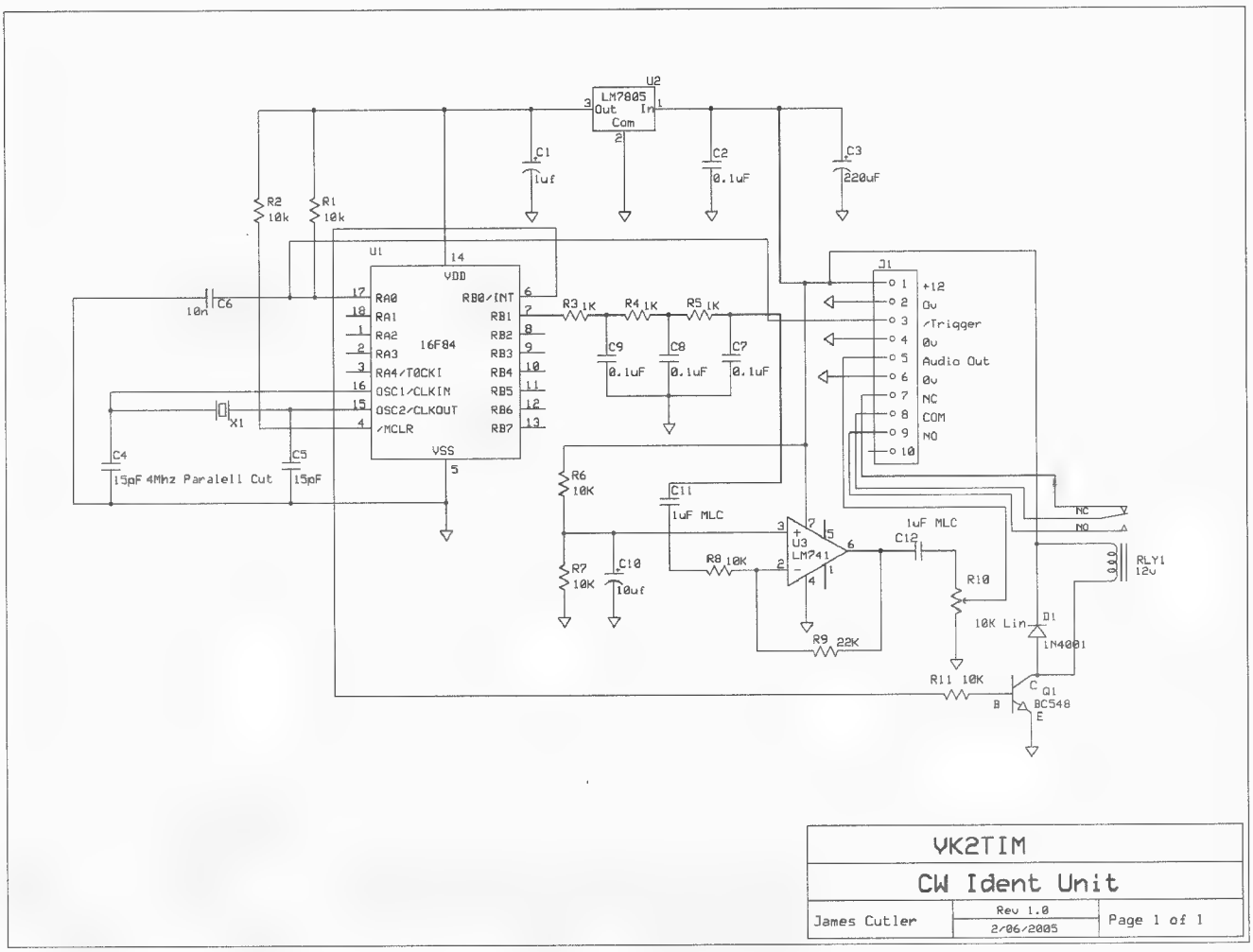
Port A on the PIC is configured by the software as an input,

Port B on the PIC is configured by the software as an output, all pins low state.

The program looks at RA0 (Pin 17), which is held high by R1, and waits in a loop for this pin to be pulled low (Pin 3 on J1). C6 simply serves to suppress any RF or electrical interference from the outside world that could cause a false trigger.

When RA0 (Pin 3 on J1) is pulled low, the PIC first changes RB0 to a high state, which pulls in RLY1 via R11 and Q1. (Note the diode D1 across the relay coil to prevent damage to Q1.) The PIC then reads the information stored in its EEPROM area, and translates the contents into either a DIT, a DAH, or a SPACE. (00h is a dit, 01h is a dah, and 02h is a space). Any value stored in EEPROM greater than 02h will apply a low state to RB0, then return the PIC to the beginning of the program, where it waits for a low state on RA0.

The PIC outputs the audio on RB1. However, this is a square wave, which is not desirable as square waveforms are rich in harmonics. A low pass filter comprising of R3, R4 and R5, along with C9, C8 and C7 does a very nice job of turning this square wave into a pretty reasonable sine wave, by filtering off



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M B Vert auto switch 10/80 m	$330
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the harmonics of the original square wave. The sine wave signal is then buffered and amplified by U3, an LM741 Op Amp, configured as an inverting amplifier, set up with a voltage gain of R9/R8 = 22k/10k = 2.2. This circuit yields up to roughly 1V P-P of output, with the wiper of R10 set to be closest to pin 6 (for maximum output). You can increase this output level by increasing the value of R9, but you would not want to set the gain too high, (more than say, 82k as a value of R9) as the Op Amp will clip, and you will no longer have a clean sine wave signal at the output.

Source Code

This code was compiled using the PICBASIC compiler, and microcode studio, both available for download on the internet. Any PIC programmer compatible with the 16F84A can be used to load the hex code onto the PIC. The EEPROM line in the source code contains the actual message information, and can be changed at will – up to 64 dits, dahs or spaces on a 16F84A,

Or up to 128 dits, dahs or spaces can be stored on a 16F628A PIC. I am happy for anyone to use the code and change the message at will, as long as credit goes to the original author.

```
'*****************************************************************
'*    Name          : Morseident.bas                             *
'*    Author        : James Cutler                               *
'*    Notice        : Copyright (c) 2005                         *
'*                  : All Rights Reserved                        *
'*    Date          : 01/06/2005                                 *
'*    Version : 2.0                                              *
'*    Notes         : Uses EEPROM within PIC to store CW         *
                    messages, so
'*                  : much less code is required.                *
'*****************************************************************
```

```
TRISA = %11111        'Set PORT A as
                      inputs
TRISB =               'Set PORT B as
%00000000             outputs
A VAR byte
D VAR BYTE
LET PORTB = 0
eeprom 0,[02,02,00,00,00,01,02,01,0
0,01,02,00,00,01,01,01,02,01,02,00,0
0,02,01,01,02,02]
:standby
IF PORTA.0 = 1        'Wait for button
then standby          press on PIN 0,
                      port A
:transmit
HIGH PORTB.0          'Close TX relay
gosub vk2tim
LOW PORTB.0           'Open TX relay
GOTO standby
:dit
SOUND PORTB.1,[120,05] ' DIT
PAUSE 100
return
:dah
SOUND PORTB.1,[120,20] ' DAH
PAUSE 100
return
:space
PAUSE 200             'SPACE
return
:vk2tim
'Read CW information from
EEPROM
for a = 0 to 63 step 1
read a,d
IF d = 00 then gosub dit
IF D = 01 then gosub dah
IF d = 02 then gosub space
NEXT a
return
```

ar

John Moyle Memorial Field Day Contest 2006

18 - 19 March, 2006

see rules page 42

Roy Goodwin VK5AXV

Roy passed away on 28th September 2005 at Millicent Hospital at the age of 83 years. Although inactive in recent years, he was an enthusiastic VHF/UHF operator since the mid 60s when he was first licenced as VK3ZYG in October 1966 and operated AM on 2 metres with an SCR522.

Born on April 3rd 1922, Roy lived on his parent's farm at Lillimur. He served with the army and airforce during WWII and on his return to the family farm he married Lorraine and together they had 3 daughters, Margaret, Ann and Jill.

Roy had a passion for electronics and gadgetry which led to his involvement in the communications section of his local CFA. His ability to be level headed and think clearly in critical situations assisted him in his work as base operator. Roy was an enthusiastic member and until his death gathered weather records for their use. In 1982 Roy received the Shire of Kaniva Australia Day Citizen Award for his contribution in the area of fire communications.

Roy didn't enjoy Morse code but he didn't let it beat him so he gained his full licence, VK3AXV in October 1968.

Roy didn't like heights so this encouraged him to build two tilt over towers. These were arranged in a pair so that one tower would assist with the lowering and raising of the other. The story goes that one of his tower lift exercises resulted in his International 414 tractor being dragged backwards with the brakes hard on while Roy clung hard to the steering wheel. "I couldn't do a thing about it" he reported to friends. Later Roy added a 44 gallon drum as a counterpoise. When more antennas were added to the towers Roy just added more water to the drum.

Roy moved to his favourite cray fishing spot, Southend near Millicent, in August 1980 where he built a new home overlooking the bay and worked the VHF/UHF DX as VK5AXV. Although he hadn't fished for crays personally for some years, he did appreciate the locals dropping a cray or two in to him on a regular basis!

Roy will be missed by his many amateur friends.

John Drew VK5DJ
for the South East Radio Group

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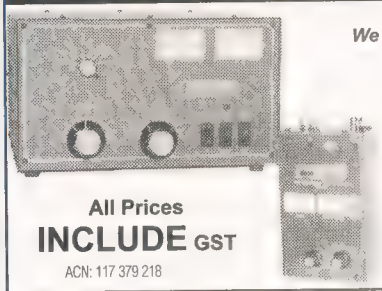

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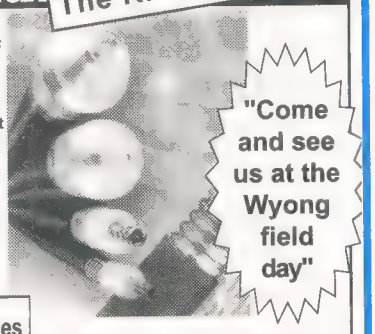

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Book review

"Outback radio from Flynn to Satellites"

by Rodney Champness VK3UW

Review by ***Rob Gurr VK5RG*** former State Manager, Department of Communications, Adelaide.

This publication, by Rodney Champness VK3UG, is one of the best records of the history and technical development of outback radio communications an Amateur operator could read.

It is an explanation, predominantly technical, of the need and ultimate achievement of a specialist communications system.

Many Amateur operators have been professionally involved with remote area communications, in marine, aeronautical and landbased systems. A specialist area has been outback communications, where many amateurs found employment as planners, installation staff, radio operators, servicemen and manufacturers.

There are 17 Chapters and 8 Appendices in the book. The opening chapters feature an indepth analysis of the specialist needs of outback pioneers, the technical solutions and the physical endeavours needed to overcome the many difficulties. This analysis is supported by a general technical history of the development of equipment to utilize the improved techniques and components, as they became progressively available

A professional or amateur student would find these early chapters most valuable as an aid to understanding some essential communications fundamentals.

The latter chapters are full of technical descriptions of the equipment used over the years, including current alternatives such as Satellite, Internet, Amateur Radio (Travellers' net) etc.

Chapter 13 describes a number of other advantages afforded by the improving outback communications. The development of the "galah" sessions amongst the remote outstations with a format similar to the later "Citizens Band Radio Service", the historical and now world famous "School of the Air", and ultimately the "Country Women's Association of the Air". These intercommunications, outside the definition of "telegram traffic" caused regulatory authorities some concern. However with the passage of time these person to person conversations became a regular part of the daily routine for most homestead owners.

The "School of the Air" gave a justified expansion to the dreary "correspondence courses" that children undertook, as they were now able to discuss daily their studies with teachers and fellow students, sometimes a thousand kilometres away With this marvellous teaching aid, students progressed more rapidly than under the correspondence only method.

Chapter 15 held my attention specially. The reasons why the International Telecommunications Union in 1959 introduced a requirement that all High Frequency Fixed Stations should convert to Single Sideband techniques, and the technical and operational benefits of this mode are explained in clearly written detail. At this time many persons employed in the radiocommunications industry did not understand the SSB technique, and there was persistent condemnation of the need to convert to SSB. Now the changeover is 30 years behind us, there are few that can remember the difficulties of Amplitude Modulation on High Frequency.

The Appendices contain even more enlightenment for the student. Antennas, propagation and frequency allocations, terminology and bibliography are covered in detail, and there is one appendix devoted to profiles on some of the early pioneers in this area.

Graham Pitts (VK6GF ex-VK5GE), one of these pioneers and currently living in Western Australia, came to my attention through monitoring his daily schedules with outstations on the Pt. Augusta Flying Doctor network, and later, when assisting him in the removal of television interference adjacent to the Port Augusta base. Graham wrote the "Introduction" in Rodney's book, and described briefly the extraordinary efforts required to logically determine, by questions and answers, the source of the problems at an outback station. I have heard Graham "walk" station owners through a fault analysis of their equipment, from battery supply and charging equipment, through the transceiver and on to the antenna tips. Such help to determine the source of their problems was of valuable assistance to the station owners, saving them days and sometimes weeks without communications, while the set was away undergoing repairs. There were, and still are, no maintenance people roaming the outback to call in at short notice.

The publication is A4 size, 10 mm thick, and 186 pages of technical history that has never been previously presented. It should be in every Public Library, or on your own personal bookshelf

I recommend the book to all amateur and professional radio enthusiasts.

Snapshot of amateur radio station VK3ZA

John Bennett VK3ZA

This station was established in western Victoria in 1982 after re-location from the shores of Port Phillip Bay and from Western Port Bay, Victoria.

The installed equipment was capable of receiving radio signals with continuous coverage over the range 2 kHz to 6 GHz.

Several Marine bands were continuously monitored; for example, 500 kHz, 2, 4 and 6 MHz., with an Auto Alarm facility on 500 kHz.

Various wire antennas were employed with wide-ranging capability to connect to and between items of equipment; filters, Wide Band Amplifiers, Down Converters, counters etc, through coaxial RF patch panels and cords. All the coax connections within the shack utilized 50 ohm RG223 double-screened cable. Balanced feed lines were used with some antennas, including the Beverage VLF, and the lines ran in the ceiling of the room, between the balanced switching and patch panel at the Operating Position and the equipment racks at the opposite end of the room.

Six different VHF/UHF antennas were mounted on a triangular lattice mast on the roof of the Shack.

In the UHF/Microwave region, a radome-enclosed dish allowed continuous coverage from around 450 MHz to 6.0 GHZ with several different feeds and LNA/LNB combinations. The dish, mounted on a gyro-stabilised base, gave an aiming accuracy of 0.18 degrees in both azimuth and elevation.

The base Intermediate Frequency 'patched around' the installation for most activity, other than amateur operation, was 70.0 MHz. Frequency synthesisers and mixers allowed adjustment of the injection frequency to maintain the 70 MHz IF over the range 0.1 Hz to 15.0 MHz

In addition to operating on most of the HF ham bands, the station, using Military callsigns and frequencies, acted as Base Station for a number of Australian Army adventure training and other exercises, including Special Forces, which took place in remote parts of Australia and in New Zealand; as well as activities in South East Asia.

While some of the station equipment was of a commercial/military nature, much of the gear was 'home-brew' or modified to suit the needs of specific projects

The station was dismantled in late 2001 to be re-located to a low-noise area in north eastern Victoria.

(Lt Col John McL Bennett [Retd] was involved with the communications industry, particularly Amalgamated Wireless Australasia Limited (AWA) and the Australian Army from June 1950 to April 1987. In 1954, he was one of the two senior engineers responsible for installation and commissioning of all the communications facilities at Avalon Airfield, near Geelong, Victoria, which was built as the home of the Australian Government Aircraft Factories. Since then, he has spent almost as much time working outside Australia as at home. He obtained his Commercial Radio Operators Certificate in 1950 and has held several amateur call signs in Australia, the Pacific Islands and Asia.)

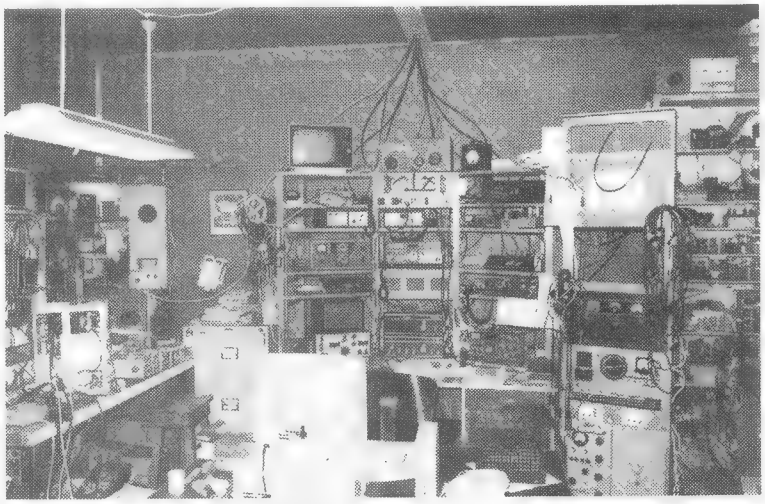


Photo 1 – VK3ZA operating position

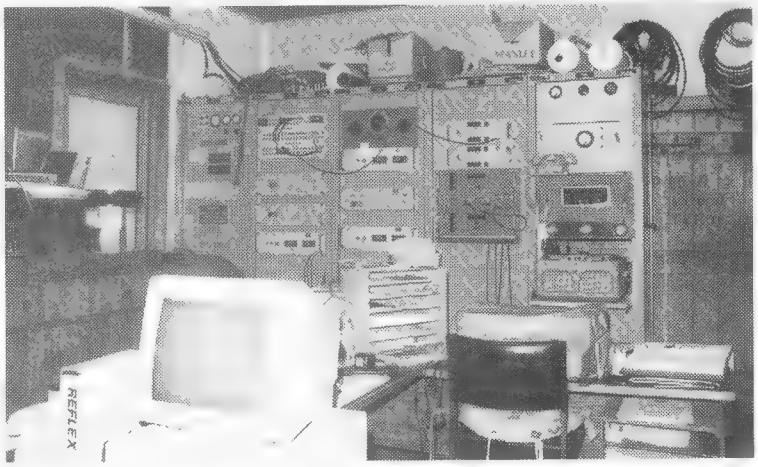


Photo 2 – VK3ZA satellite equipment racks

Making use of wireless LANs

Steve Fraser VK5ASF

There are many articles available, on both the Internet and in print, about wireless LANs (Local Area Networks). However, few go beyond antennas and basic connections. Even fewer deal with ways in which amateur radio operators can make use of the facilities. This article will attempt to remedy that situation.

Defining moments

A wireless LAN is a connection of computers, linked by radio, making use of a technical standard called 802.11. There are several variants of this standard, each having different frequencies and performance. The most common is 802.11b, which provides an 11 Mbit/sec raw data rate, using the 2.4 GHz band. That's around 10,000 times faster than the most common packet radio setup. It uses ISM bands, which overlap amateur allocations at this frequency.

The protocol used is TCP/IP. That has been available for many years on packet radio, but has never been particularly popular, mainly because it was complex to set up and never inter-operated well when on the same channel as normal AX.25. However, TCP/IP is what operates the Internet, so it is clearly both capable of good performance and able to be used by non-technical people.

The 2.4 GHz band used is well into the microwave spectrum, and hence needs "line of sight" connections – no ionospheric bouncing for DX here! Each station must be able to see another station to which it connects. In practice, this means that large numbers of nodes or access points are required in order to provide widespread coverage.

The correct form of address

Each computer on a TCP/IP network is identified by a unique address, called an IP number. That number is allocated to you by the station to which you connect (or "associate" in 802.11 terminology). It takes the form of four numbers, separated by dots, such as 10.107.0.37 – and no-one else in your network should use that number at the same time as you. And each system in the network knows how to get messages to that address. We call that "fully routed". It means that regardless of where you connect, you can communicate with everywhere else.

Photo 1 – A Linksys "data transceiver" with removable antennas which are replaced by an external antenna for wireless LAN use.

Seems like hard work

When the South Australian Packet Users Group (SAPUG) looked at this technology a few years back, we realised that implementing a widespread, fully routed digital network across the Adelaide metropolitan area was far beyond our resources – it'd be like building fifteen or twenty repeaters! The cost, and the manpower required, was just prohibitive.

The concept languished until we teamed up with a group called Air-Stream, who were assembling such a network for general community use. Amateurs certainly qualified as that. The Air-Stream network was very small at that stage, but we could see the potential, so we signed an agreement to pool resources and share each other's infrastructure. Since then, we have implemented several access points into the network, which itself has grown to cover a substantial portion of the Adelaide area. VK5 amateurs now have access to an 11 MBit network, over which they can carry traffic. See http://www.air-stream.org/ for more details about Air-Stream.

So what does it do?

Each station on the network has a unique IP number. So if VK5ASF wishes to connect to the VK5SPG BBS, he needs to know his own IP number on the network, and that of VK5SPG. As long as his software is TCP/IP capable, then he can connect. With WinPack, for example, you can use IP numbers instead of call-signs (in connect scripts) and so can connect to a BBS and download messages much faster than via conventional packet. The WinPack software takes care of the TCP/IP connection, and the network takes care of getting those TCP/IP packets to the correct location. The user just sees a much faster connection – the commands, display, and results are identical.

Of course, just reading bulletins faster may not justify the effort involved. But a much faster connection makes many functions that are just not viable at 1200 baud (conventional packet) possible.

As long as a route exists between two stations (because of their IP numbers) then all sorts of existing software will work over that link.

What else is possible?

Let's have a look at a few other functions that are also possible, without getting too bogged down in "how" they are done – that's probably a subject for quite a few future articles!

The first is AXIP. Under AXIP, conventional AX.25 packets are forwarded over an IP link, and hence take advantage of its speed. As long as the Operating System on your PC supports AXIP, the existing AX.25 packet programs will run unchanged. For Linux users, the ax25ipd package does this beautifully. For Windows users, it can be done with BPQ (the 32 bit version). Any packet program that uses these interfaces can be used over the wireless LAN.

Another function is DXCluster. The VK5 network uses the wireless LAN to carry the DXCluster traffic from the wormhole where it arrives, to VK5SPG. Users on any of the conventional RF ports on 2 m and 70 cm can then make use of the DXCluster. This is a good example of software written for AX.25 operating unchanged over AXIP.

APRS traffic could be carried from one APRS node to another over the wireless LAN. Sharing APRS on channels with other AX.25 traffic is problematical and generally unsatisfactory, due to its volume and data rates. A wireless LAN connection can easily accommodate this.

Voice Over IP is a technology whereby audio (and even video!) is carried over fast digital links. Examples are IRLP, Echolink, Skype, etc. Many of these can be carried over a wireless LAN to link repeaters, chat, or convey information. You could even transport the Sunday morning broadcast over the wireless network! That just isn't possible over conventional packet links.

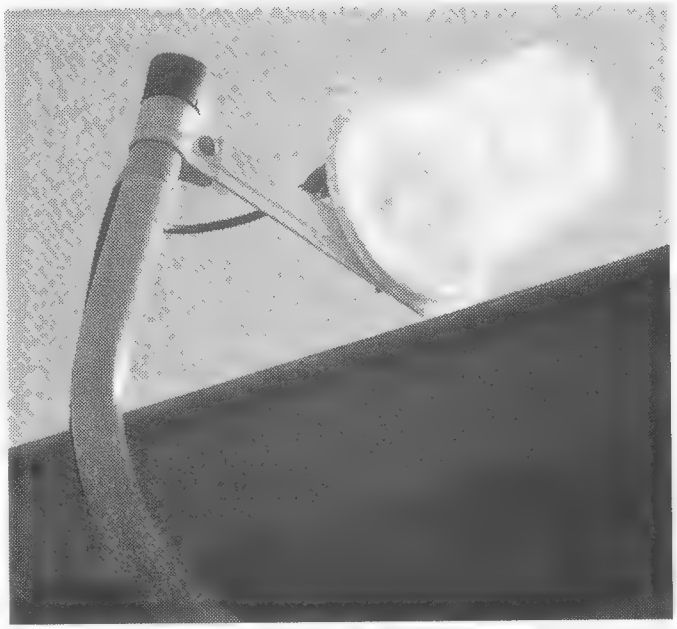


Photo 2 – A simple helix antenna is sufficient if you have a good location!

Messaging forwarding, using standard AX.25 protocols, can also be done. FBB, JNOS, etc can all use standard connection techniques (with AXIP) or can use direct TCP to forward messages. Where a number of BBSs exist within a metropolitan area, this can remove forwarding from user ports, benefiting even non-wireless-LAN connected users, by reducing congestion. It also makes it far easier to forward messages such as 7+ with large numbers of parts.

Tunnelling is a technique whereby traffic for one network is carried by another. In our case, amateurs have a network using IP numbers starting with 44, called AmprNet. Most wormholes worldwide are connected to this, as well as BBSs, DXClusters, Converse servers, etc. It's quite possible to tunnel a connection from an amateur's home PC to a nearby wormhole, using a wireless LAN as the underlying transport, and hence enabling each amateur to have full connectivity to all parts of the AmprNet and the facilities it offers.

Finally, software libraries can be established. With Windows, the file

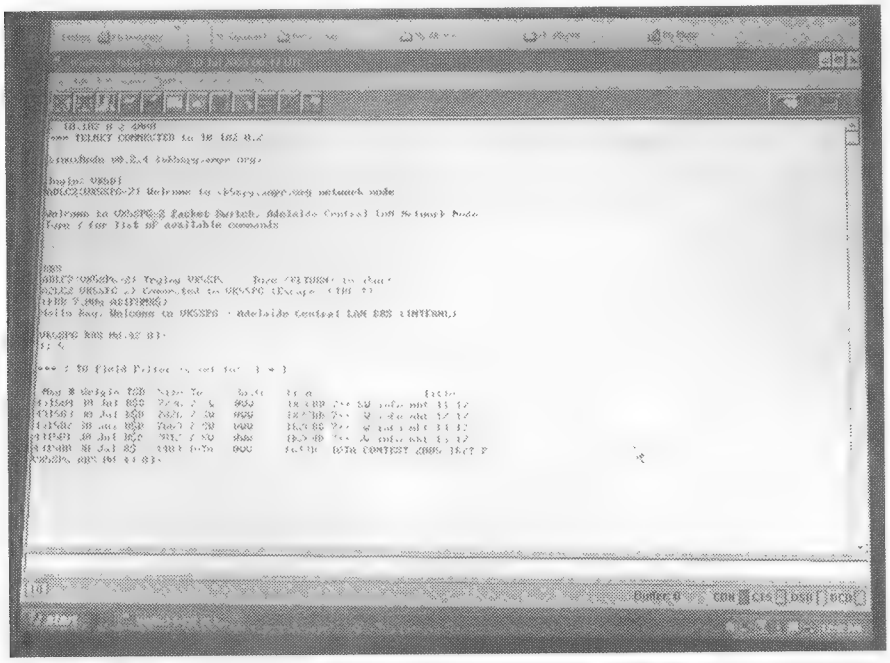


Photo 3 – WinPack being used to connect to VK5SPG.

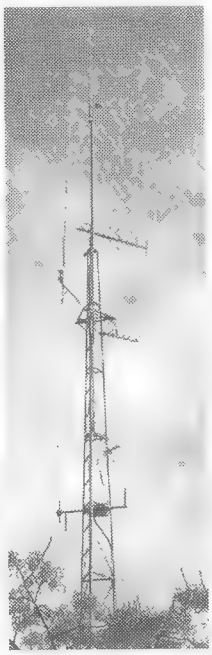
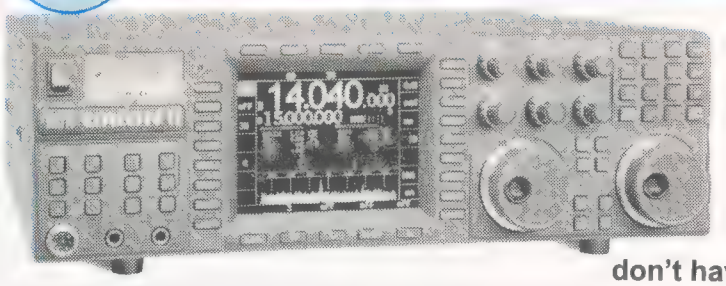


Photo 4 – The VK5SPG mast, showing the wireless LAN collinear and dish below the 2 m and 70 cm antennas.

TTS will be at Wyong with a truck load of systems !!



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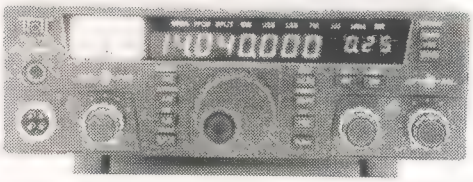

SGC

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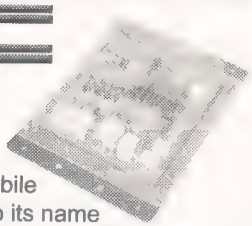
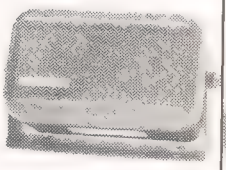


SGC

ADSP2

Noise Reduction Speaker

Little noise but the reviews are shouting about it.



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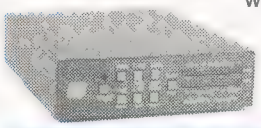

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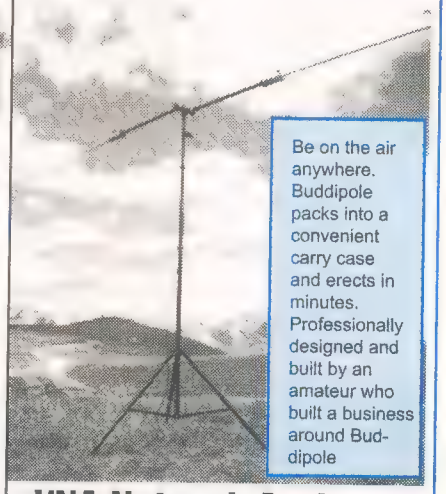

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sizes involved have made this quite impractical – very few people are happy to do a download that takes twelve hours over packet! With a wireless LAN connection, that can shrink to just seconds. It can even be setup so that users can just "drag and drop" to download the file.

How to get started

Both the amateur and the server being accessed need to be able to communicate over the wireless LAN. Before purchasing equipment, it's a good idea to have someone who already has gear to do a "site survey" – to monitor just what sites can be contacted. Air-Stream did this for SAPUG, but any group setting up a wireless LAN would probably have access to suitable equipment.

The "line of sight" needed by these signals can be deceiving, so results are not always what is expected. Some apparently good sites can be very bad for operation – and vice versa! So a real live test is a good idea.

Once a suitable connection site is identified, then the technical connection settings can be provided to you by the operator of the site. These must be adhered to in order that you can communicate with the entire network reliably – they include IP numbers, subnet masks, DNS servers etc. (If you don't understand all these, you'll soon learn once you start setting up your site!)

Finally, a BBS can start to implement the new features, such as those described above – or any others that people devise. There's a huge range of things that could be done to make packet more interesting, more exciting, and more viable, and more interesting to new-comers. A high speed connection is just the starting point.

Summary

There are substantial potential benefits to the amateur community from a high speed network. The RF side is just one part – amateurs also need to come to grips with digital networking techniques and standards. So there is a learning curve ahead – but also a bright and exciting future if we seize it.

A toaster oven in the radio shack?

Frank Winter VK4BLF

More and more amateur radio projects are using SMD (Surface Mounted Devices) in their designs. The advantages are fewer parasitics in RF sections and, of course, denser construction methods. A project that might have been the size of a house brick can now be mounted in a little zippy box.

Photo 1 - Mistral toaster oven.

So what does that have to do with a toaster oven?

The problem with SMD devices is that conventional soldering techniques are difficult to use. The resistors, capacitors and ICs are tiny and,unless you are very careful, they either go up in smoke or attach themselves to the iron. This makes it hard to solder them to the PCB. Professional service people use expensive hot air pencils that avoid direct mechanical contact with the chip. This works but unless you can control the airflow or glue the chips to the PCB, the component can literally blow away to be lost forever.

Another way of soldering SMD components is to use a Reflow Oven, which is basically a box which heats and cools PCBs and their components in a controlled way. Manufacturers of SMD devices provide ideal Temperature Profiles for use in Reflow Ovens to make satisfactory solder joints. These profiles are readily available from manufacturers.

If temperature profiles can be reproduced without spending thousand of dollars, the task of soldering many of these tiny components is possible for the radio amateur. Well, it turns out that a readily available toaster oven can do that quite simply. Its insulation and heating characteristics make it easy to produce the required temperature profile. And all that for just under $30! Lucky, isn't it. (see Photo 1)

At the time of writing, department stores sell them under the brand name of Mistral (Mistral International Pty Ltd, 324 Frankston-Dandenong Rd, Dandenong South, Vic 3175 Tel 1300 363 907). It has two 650 W ceramic heating elements in series and also features automatic temperature control. This latter feature is not necessary for re-flow soldering but comes in handy when you re-heat a pizza. This heater has the important characteristics of thermal insulation and high power, all in a small box. Other brands may well be suitable for use as Reflow Ovens as well.

So how does it work? To start, apply solder paste (now readily available from major electronics stores) to the copper pads – a little dab will do. Next, place the components on the board and make sure they are in the right position. On a dense board this can take a while but there is no need to hurry, the solder paste remains workable for about 10 hours before it dries. When all the SMD components are placed, put the board in the oven. The natural adhesion of the solder paste is enough to keep them in place, so long as the board is handled carefully.

To begin the soldering procedure turn the oven to full and wait until the temperature reaches 80 C then turn the oven off. The temperature will continue to rise to about 100 C. Leave it at that temperature for about two minutes. This part of the procedure is called soaking, and it is necessary to reduce thermal stress between metals and plastics in the components for the next step. It also dries the solder paste and releases solvents from the paste.

Next, turn the oven on to full and

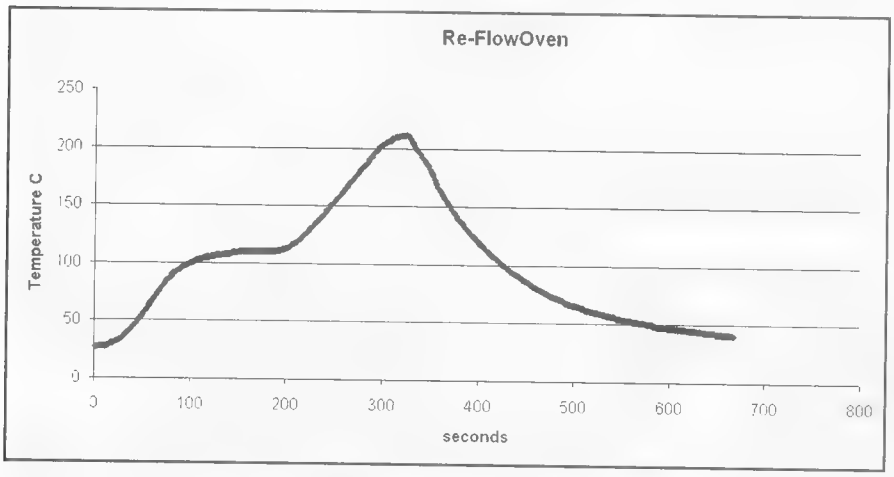

Photo 2 - Measured toaster oven temperature profile.

carefully watch the temperature. When it reaches about 140 C you can see the solder paste melting and sucking itself into the joints. Let the temperature continue to rise to about 180 C to complete the reflow step. When that temperature is reached, immediately turn the oven off and open the door fully. Leave the board in the oven so it cools down slowly.

This procedure produces almost the ideal temperature profile recommended by most component makers. It is however wise to check with manufacturers on the internet before you reflow any rare components. With practice comes experience and you will be able to tell which components need special treatment. The temperature profile (see Photo 2) displays the profile produced by the procedure just described. It was recorded in one second intervals with a digital multimeter connected to a computer and a thermocouple to measure temperature.

I have been interested in using SMDs for some time but the impetus to do something about soldering them came with the formation of a small SCARC group to build "Scotty's Spectrum Analyzer". A large number of components use SMD format and a way of soldering the boards easily and surely had to be found. The toaster oven is just perfect for this. Initially, people could not believe it was so simple – surely there must be some catch. To dispel these doubts I decided to demonstrate my "new soldering iron" to some SCARC members at one of our Sunday meetings (see Photo 3). Everybody was most impressed, so much so that three SCARC amateurs bought their own oven.

I can't claim that I came up with the idea. Using a toaster oven with an expensive temperature controller has been around for some time on the internet, but it really works without any elaborate control other than human input.

The whole procedure takes less than five minutes once you have spent hours placing the tiny SMD chips. The solder method described here makes building ham radio projects with surface mounted devices quite possible, given care and a little practice. In particular UHF and SHF devices benefit from using this construction technique.

Photo 3 - Frank Winter VK4BLF demonstrating the SMD soldering oven to club members at the Sunshine Coast Amateur Radio Club. From left to right, Harry VK4TK, Chris VK4UTT, Frank, Kevin VK4WOT and Jim VK4UAV

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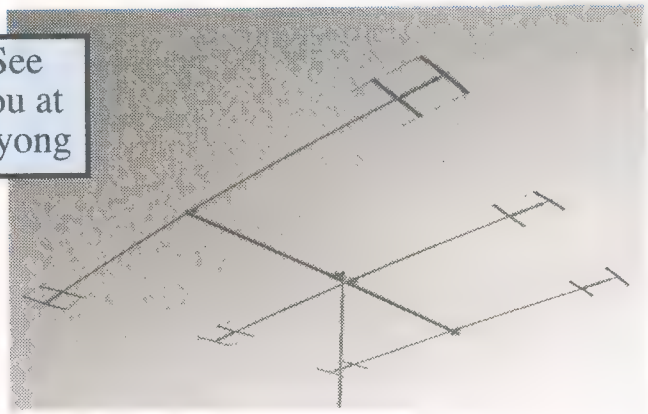

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An experimental HF aerial analyser	Jim Tregellas VK5JST	May	5
Building a Q-meter	Jim Tregellas VK5JST	Jan/Feb	5
Making shunts for ammeters	Drew Diamond VK3XU	November	27
The 2002 DFD updated	Phil Rice VK3BHR	September	24
Using the HP 8405A vector voltmeter	Richard Sawday VK5ZLR	June	12
Yet another RF bridge	Dale Hughes VK2DSH	April	5
Technical - power supplies			
A miniature variable dc supply	Jim Tregellas VK5JST	July	13
Another dc to dc converter for laptop use	Warren Stirling VK3XSW	July	38
Experiments in aircraft enhanced propagation	Barry Millar VK3BJM	November	11
An automatic knob twiddler for the 40 m CW band	Joe Rotenberg VK3BBN	October	6
Technical - transceivers			
A dual band CW tranceiver. Part 2	Dale Hughes VK2DSH	September	5
A dual band CW transceiver Part 1	Dale Hughes VK2DSH	August	18
My even further experiences with DSB QRP	Graeme Wilson VK6BSL	November	49
The ICOM-730 HF tranceiver (Know your second hand equipment)	Ron Fisher VK3OM	June	21
Technical - Transmitters			
Another method of making "air wound" transmitting coils	Drew Diamond VK3XU	September	29
Notes on HF transmitting coils	Drew Diamond VK3XU	September	29

ar

Over to you

BPL

I am absolutely amazed that, in spite of all the adverse publicity from USA, Austria, UK and other countries regarding the destructive consequences of BPL, a company here in Australia, can flaunt the laws and establish BPL. How on earth do they get permission to conduct these "trials" when experience has proved that interference is assured?

Surely with all that is known about BPL interference, the authorities should have prevented operations from starting up. Now that they are operational the licensed users of the spectrum should not be expected to fight the battle. However, the amateurs will fight, and win.

The amateur radio fraternity has been working hard to encourage newcomers into the hobby. This would be pointless if there is no place to operate satisfactorily. It is not "Australian" to allow giants to come in and take away the very medium of our hobby.

It really sickens me to know that BPL is here and we need to fight to protect what is legally ours.

To the authority that gave Aurora permission to cripple amateur radio, I say, shame shame shame.

B McAleer VK4BCM

Foundation Licence training and assessment

I have just observed a Foundation Licence training and assessment weekend conducted at Box Hill North in Melbourne on the weekend of 10 and 11 December with a view to perhaps getting involved in this program. The program was impressive in terms of the quality of the instruction, but most importantly, in the views of the candidates themselves.

Several commented to me that they had tried getting a novice licence several times, but had just about given up hope of getting their ticket. However, the approach taken with the Foundation Licence was a great improvement:

1. The study guide was clear and easy to follow and pitched at the right level.
2. The Saturday instruction program was of a high quality and very helpful.
3. The examination paper was clear and fair since all questions asked were in line with the syllabus and study guide.
4. They had confidence in the fairness of the assessment process.

My own observations were that the program was transparent in that the candidates were assessed by people other than their instructors, and that a staged appeal process was available.

Those who devised this excellent program deserve congratulations. It augurs well for the future of our hobby.

Kevin B. G. Luxford
VK3DAP / ZL2DAP

News from...

VK2

Tim Mills VK2ZTM.

Members of Amateur Radio – New South Wales are advised that the Annual General Meeting of the parent company, Wireless Institute of Australia, NSW Division, is scheduled to be held on Saturday 22nd April 2006, at Parramatta.

In the lead up to the event, the following dates are important in the preparation:

February 10th. All Councillors' and office bearers' reports to be submitted.

March 3rd. Close of nominations for election to Council.

Close of Motions and other business for the meeting.

March 24th. All reports and other paperwork to be ready for the printer.

April 1st. Mail out of material for the meeting.

The first of the Tender of Deceased Estate equipment was completed last November and distributed during the Trash and Treasure at VK2WI Dural. Despite the rare occurrence of a wet day, there was a good attendance for the event. The second round of Tenders was conducted during January. The next Tender will be on line now - www.arnsw.org.au - and distributed at the March 26th T & T. The closing date will be March 10th.

VK2 field days coming up include the Central Coast ARC event on Sunday the 19th February at the Wyong Race Course. The Urunga Convention on the Mid North Coast will be held over Easter and the Oxley Region event at Port Macquarie on the June Long weekend.

AR-NSW is getting into the Foundation Licence training with both weekend and evening operations. Barry VK2AAB has taken over from Pat VK2JPA as group leader of the Parramatta based operation. Those wishing to undertake these courses should make contact with the AR-NSW office when it is open on Tuesday, Thursday and Friday between 11 am and 2 pm by either telephone 02 9689 2417 or a personal visit to 109 Wigram Street, Parramatta. At all times by FAX 02 9633 1525; the telephone answering machine on 9689 2417, Mail to P. O. Box 9432, Harris Park 2150; or email to vk2wi@ozemail.com.au By any method, please provide contact details. Dates of the courses are included in VK2WI Sunday news

It is now two years since the requirement for Morse was dropped but the mode appears to be gaining popularity. The operators of the VK2BWI Slow Morse team have continued to provide their time and efforts several nights per week on the 80 metre frequency of 3550 kHz. The service provides a range of styles and a read back of the text sent. Like many activities, the team would like assistance from more operators. If you would like to help, get in touch with any of the operators or Ross VK2ER, who helps coordinate the service. This and the automated VK2WI transmission on 3699 kHz is a service provided for and on behalf of AR-NSW.

The VK2WI broadcast team is still in need of operators for presentation or engineering for both the morning and evening sessions. Our numbers have been dropping and this has increased the load on those remaining. It is the practice to schedule two operators to the session of which only one needs to hold an amateur licence. This is an opportunity for those interested in either talking or operating the engineering console to assist. Contact John VK2JJV, the roster coordinator, VK2WI or the AR-NSW office if you can assist.

There are plans to add a second shed to the Dural property for storage, as well a providing a covered area for T & T operations. Some equipment is becoming available to restore the 2 and 70 beacons. The 6 metre beacon on 50.289 MHz is continuing to perform well on its wire dipole about 6 metres above ground. Jack VK2XQ, who provides the 6 metre DX report to VK2WI News advised at New Year, that it has now been heard in all VK call areas, the Pacific and Japan. Part of the Dural upgrade will be to provide some new, more elevated beacon antennas, located away from the main building. There are also reports that the central NSW Orana Region ARC has plans for beacons in their area. A break through of the 40 metre AM service into the main engineering console has resulted in recent transmissions having to be made with the lower powered SSB callback transceiver. Part of the problem is the 40 metre dipole antenna is almost above the building. It is planned to establish some new HF antennas further from the main building. Barry VK2AAB has established a 40 metre packet port at VK2WI on 7038 kHz. The 40 metre packet transmission, like the 80 metre Morse on 3699 can provide a band propagation indicator. This 40 metre transmission is in addition to the existing packet systems on 144.850 and 434.100 MHz.

All the best for 2006 from AR-NSW.
73 - Tim VK2ZTM.

Silent key

Avid six metre operator passes on: John ("HO") Van den Bogert VK2HO

It is with great regret we record the passing of VK2HO ("HO") John Van den Bogert, suddenly at his home in Lismore on 7th November, 2005.

John was a very keen long time 6 m. enthusiast and very well known on the band in the Southern States, VK4, VK6 and internationally.

He was a fine professional technician with great experience in VHF and UHF tranceivers. He provided valuable assistance and advice whenever called upon.

A very good friend and associate, he will be sadly missed, especially as "HO" on 6 metres.

Our sincerest condolences to his wife Robyn and Family.

Vale John Bogert VK2HO.

Submitted by: Wal. Munn VK2JHN.

VK3

Amateur Radio Victoria News

Jim Linton VK3PC
Website: www.amateurradio.com.au
Email: arv@amateurradio.com.au

Happy New Year!

The year 2006 began on a positive note with the amateur radio community starting to grow again after a decade of decline.

Throughout this year we will witness Foundation Licensees keenly engaging in many aspects of amateur radio activity, and possibly a third of them upgrading in coming years to at least the second tier Standard Licence.

A clear message from members through the Think-Tank exercise and in general discussion is that they believe Amateur Radio Victoria should provide licence training and other education.

Many of today's long-time VK3 radio amateurs were the product of our classes held at East Melbourne, Fitzroy and later Canterbury.

In response to the arrival of the Foundation Licence, the decision was made for Amateur Radio Victoria to re-enter the field of licence training.

A small team was formed to design a weekend training course for the Foundation Licence which saw successful sessions held in November, December and January at Box Hill North. At this stage a course and assessment session is planned for each month.

Inquiries about these should be directed to Team Leader, Barry Robinson VK3JBR email arv@amateurradio.com.au or phone 0428 516 001.

Thank you to those members who have directed interested people to our Foundation Licence training course. A further expansion of our licence training and education will be announced later.

Welcome Aussie Foundation Licensees

To celebrate Australia's new era of ham radio, in particular the entry level Foundation Licence, Amateur Radio Victoria has struck a special activity award.

To qualify for the WAFL (appropriately pronounced waffle) Award needs logged contacts with Australian Foundation Licence Stations.

Australian award claimants are required to submit evidence of contact with at least 50 while DX stations require at least 10 contacts (see rules).

The Award will run until Australia Day, 26 January 2007, coinciding with the steady induction of the new members of the amateur radio community.

Full details can be read on the Amateur Radio Victoria website and are expected to appear in a future edition of AR magazine.

Membership and financial

The membership list stood at 642 and our Treasurer, Jim Baxter VK3KE, reports that the year for the organisation that ended on 31 December saw a small financial surplus achieved in line with budget expectations.

More detail will be provided in the annual reports now being prepared for the annual general meeting on Wednesday 24 May.

Behind the membership services and other activities of the organisation are members who volunteer their time and energy. Thank you to those who have assisted during the year by staffing the Ashburton Office on Tuesdays, running the QSL Bureau and more recently getting involved in licence classes.

Nominations for the 2006-2009 Council can be made on a form available from the Secretary, with the deadline being 2.30pm on Thursday 23 February, 2006.

Geelong Radio and Electronics Society (GRES)

Rod Green VK3AYQ

The last 3 months of 2005 were again most productive. The first talk for the quarter was given by John VK3HJS. He described his work using computer WAN cards to construct a 2.4 GHz data transmitter. He talked about the problems associated with getting the data from the computer to the antenna. He eventually solved the problem by using Ethernet cable from the computer to the WAN card at the antenna. He also reminded us of the fact that WAN networks are not secure as he was able to hear other networks on 2.4 GHz. John VK3TKH gave an interesting talk on the practical uses of oscilloscopes.

We were given instruction in basic CPR by an officer of the Victorian Ambulance Service. His theme for the evening was electric shock and what to do in the event of it occurring. This information is of most value, not only in the pursuit of our hobby, but in everyday life. Hopefully we will never have to put into practice what we learnt.

A "shack visit" was held. These evenings are most popular. Members divided into 3 groups and went to visit the shacks of other members. These visits give an insight to where the signal you hear on air originate from. They also benefit the visitors by seeing first hand how other amateurs arrange their stations.

There were 2 WICEN exercises held during this time and most of our members participated in either 1 or both of them. The first was the "Otway Challenge". This is a 160 km bike ride through the Otway Ranges and along the Great Ocean Road. There were over 200 participants and the money raised goes to heart research. The second event was the Anaconda Adventure Race. This is a race of either teams of 4, or individuals,

continued next page

News from...
WANSARC
Australia's youngest amateurs
(cover story)
see inside back cover

News from

VK3 continued

over a course of 42 km. It consists of swimming, running, kayaking, and mountain bike riding. This was held at the seaside township of Lorne on the Great Ocean Road and the surrounding area. It was challenging for both the 1000 plus entrants in the race and the 11 radio operators. This area of Victoria is heavily timbered rugged terrain and is not the best for radio communication. However good communications were provided between all check points and the control station. This was due to a portable repeater being set up on Teddy's Lookout. Communication was then possible from the Lorne foreshore to the inland check points and along the Great Ocean Road.

Our Wednesday group has continued to meet regularly. They have been kept busy doing maintenance on the clubrooms, sorting out scrap metal and assessing items that have been donated to the society. In addition to this work, classes in theory and regulations were held on these days under the guidance of John VK3TKH. Because of these classes we should be hearing some new calls on the air in the near future.

Regular meetings for 2006 will start on Thursday January 12. Visitors are most welcome. The club rooms are at 237a High St. Belmont, with meetings starting at 2000 hrs local time.

VK5

Elizabeth Amateur Radio Club

Members of the Elizabeth Amateur Radio Club (left to right) Keith VK5OQ, Merv VK5MX and Steve VK5AIM, prepare for the new Foundation Licence instruction and assessment event. With the changes made to the AOCP the clubs plan to have a lot more amateurs on the bands.

It is hoped that these changes will enable people who have had an interest in electronics and amateur radio, but in the past have been deterred by the requirements for Morse code along with the higher standard of technical knowledge, to join amateur radio. Young people who have shown an interest in electronics, and have just tried electronics at High School, may be more inclined to improve their skills. After all, electronics are in almost every thing these days.

The EARC will establish Instruction Classes and Examinations in 2006 at the Club. Anyone living in the Salisbury, Elizabeth, Munno Para and Gawler area can phone the following EARC members for more information: Keith on 8280 7430, Merv on 8346 7042, and Steve on 8255 7397.

Steve VK5AIM

VK6

VK6 QSL bureau

The operating figures for the years 2004 and 2005 are Inwards 11796/11170, and Outwards 6356/3430. Now a listing of the countries; number of deliveries from those countries; and the number of cards received from each country as listed for 2005.

9H1-1-11; 9K2-1-9; 9M2-2-11; DL-4-2030; DU-1-32; EI-1-35; F-1-650; G-2-49; HA-2-278; HB9-1-171; HS-1-8; I-1-870; JA-10-2211; K/W-3-837; LY-1-32; OE-1-165; OH-2-355; OK-2-248; OM-2-220; ON/PA-3-423; OZ-1-15;PY-2-5; S5-1-40; SM-2-177; SP-3-420; SV-1-1; T9-1-11; UA-4-873; UR-1-76; VE-1-40; VK1-2-19; VK2-2-500; VK3-3-127; VK5-1-21; VK7-1-6; VR-2-27; YB-4-26; YL-7-55; YO-7-103.

There has been an almost 50% reduction in the number of cards sent out in 2005, yet the incoming numbers have remained constant. Some cards were noted as having been for contacts made 2, 3, or more years ago. Are the bureaux tardy in sending them or was the amateur slow in sending the card?

It may be seen from the listing that there are many countries that have not sent any cards in the past year. More on this problem later.

With the WIA now providing a free outgoing QSL service, perhaps it is time to consider either recommencing or starting for the first time to QSL your contacts. In the past the cost of printing cards was a factor, but now with QSL printing programs available for home/amateur computers, this has removed the past high cost. Also, I am able to supply to your address where you may have cards printed, ranging from $30 for a single sided B/W card to a Four colour printed on both sides for $70 per 1000, delivered to your QTH.

Overseas countries have no doubt been caught up with the escalating costs of posting mail as have we here in VK. As an example of the cost of operating the bureau, sending VK6 QSL cards to the National Bureau , (which is the Westlakes Amateur Radio Club), for sorting and to post a 1000 cards is $8.10 for a Post Office Satchel, then assuming that the 1000 contained 350 DL cards, it then costs $15.50 to send the 1 kg parcel to DL. That is a very basic cost to the W.I.A.

So when do I see your QSL cards starting to flow into the bureau?

73 Neil VK6 QSL Bureau Manager

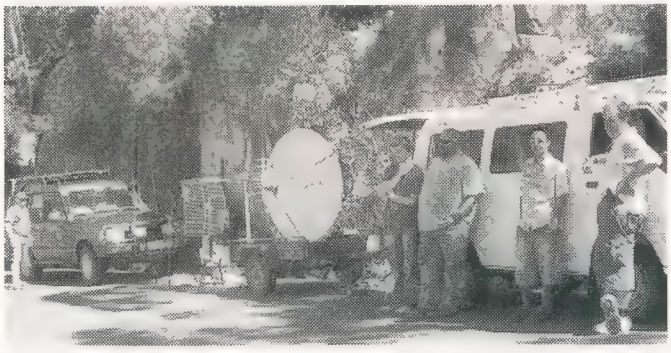
News from...

VK7

Justin Giles-Clark VK7TW
Email: vk7tw@wia.org.au Regional Web Site: reast.asn.au

Statewide ATV link attempt

On 30 December 2005 testing was undertaken with 1.2 and 2.4 GHz ATV paths between Mt Wellington (Sth), Mt Barrow (Nth) and Lonah (NW). On Mt Barrow were Tony VK7NAU and Rick VK7HBR with ATV receive facilities. At Lonah, Tony VK7AX and Bob VK7ZGR set up 1.2 GHz ATV transmitter toward Mt Barrow. On Mt Wellington, Ken VK7DY, Roger VK7ARN and Jamie VK7KEG, Wendy VK7FWJS, Toby VK7FTML, Damien VK7HDS, Karsten VK5ZKT/7 and Sam SWL assisted with 444.25 MHz, 1.2 & 2.4 GHz transmissions. 444 MHz and 1.2 GHz signal reports were received around Hobart from Allan VK7ZAR and Ray VK7FRND on 444MHz. On 2.4 GHz they were using a 1.5 metre prime focus steerable dish. Unfortunately a North - South link was unsuccessful however plans are already afoot to try try again!



Mt Wellington ATV: L-R Ken VK7DY, Roger VK7ARN (in car), Toby VK7FTML, Jamie VK7KEG, Damien VK7HDS and Karsten VK5ZKT/7.

BPL Interference Watch

The BPL juggernaut continues in Tasmania! In Burnie, infrastructure has been installed in the Singline Estate (underground), and in the Malonga Drive to Taroona Avenue area and emissions have already been measured. ACMA has been taking measurements in the Mt Nelson area and we await these results. I encourage all amateurs and HF CB operators to head up to the BPL trial areas and take a listen to what BPL sounds like. Keep writing those letters to the newspapers, politicians and ACMA: we need to keep the pressure on.

North West Tasmania Amateur Radio Interest Group

NWTARIG held a general meeting on 12 November with 15 people in attendance. Discussion was held about the proposed centenary celebration of the first radio transmissions by Marconi across Bass Strait in 1906. NWTARIG will work in conjunction with the Geelong Amateur Radio Club to stage an event in July 2006. NWTARIG held its end of year BBQ at Legion Park Ulverstone on 10 December 2005 which was well attended and a good time was had by all. AGM is 4 February 2006.

Northern Tasmanian Amateur Radio Club

Myrtle Park hosted NTARC's Christmas BBQ on December 15, 2005 with 30-35 enjoying the night. On Dec 18, the first NTARC foundation course was held. Course facilitators were Peter, VK7PD and Al VK7AN and five candidates sat the exam and practical assessment and congratulations to all candidates who passed. On March 2-4 of 2006 at the Inveresk Tramshed Conference Centre there will be the 2006 Satellite Conference & Tradeshow. This conference/tradeshow is aimed at both the enthusiast as well as the industry professional. More info at: www.conferenceplus.com.au/satellite2006. AGM is 8 February 2006.

Radio and Electronics Association of Southern Tasmania Inc.

Welcome to the 15 new VK7F calls who were heard on the airwaves in December 2005. All 15 attended the November 2005 course and were successful thanks

continued next page

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Spotlight on SWLing

Robin Harwood VK7RH

Radio wars — now and then

Within days of 2006 commencing, Israeli Prime Minister Ariel Sharon suffered a major stroke, which led to instability within Israel and beyond, and a radio war quickly escalated. I noticed a sharp increase in traffic from the various Numbers stations that may be operated by intelligence services. When international tensions erupt, these signals seem to be everywhere, as are International broadcasting services. It is hardly surprising that the Middle East continues to dominate HF traffic.

The BBC World Service brought forward the axing of several European language services at the end of December, instead of waiting to the end of the B05 period. Czech, Slovak and Polish quietly ended up before Christmas, although there were protests reported in the Czech Republic. Radio Slovakia received funding to continue external programming for another six months.

The Voice of Russia announced the death after a long illness of veteran broadcaster Joe Adamov, a few weeks short of his 86th birthday. He started work as an announcer at the foreign language service of Radio Moscow in 1942, and for over 40 years hosted one of the station's most popular programs, Moscow Mailbag. He will be remembered as the voice of the Cold War, but those who met and worked with him remember a much kinder man than was portrayed in his broadcasts.

This was one of the first programs I heard when I started out as a shortwave listener. It was primarily created for American audiences and I also remember hearing a separate International edition. After the fall of communism in 1991, Joe continued with the program trying to explain post-communist life in Russia.

I gave myself a Christmas present of a 12-month subscription to dxtuners.com, a web-based remote receiver facility. I have been able to tune around the bands from many localities. Many hams and SWLs are availing themselves of this facility. Before calling into Europe or the States, operators are quickly able to gauge if propagation is running or how congested is a favourite channel.

At present there are over 30 different sites a subscriber can remotely control, although some remain restricted. A favourite site is near Heathrow and this seems to be mainly scanning the nearby airports. It is far busier, naturally, than either Melbourne or Sydney Airports.

To get to the site, type in www.dxtuners.com. Subscriptions start from $5 US a week to $50 US per annum. Also read the prompts when you sign in. This will advise you what sites are down for maintenance or due to inclement weather, such as cyclonic activity or bushfires. There is a chat window for you to communicate and share operating time with other users. Some sites are naturally very popular.

Finally, I would like to thank Colwyn Low VK5UE for his assistance and cooperation in the years he has been editor of this magazine. I hope you will have time to pursue retirement Colwyn.

Email your comments and news to me at vk7rh@wia.org.au or via snail mail to 20/177 Penquite Road, Norwood,Tasmania 7250.

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News from

VK7 *continued*

to course convenor Reg, VK7KK. At the time of writing, the course for January was already full and February's course was filling fast. If you wish to reserve a place for the next available course please contact Reg on 6248 6824 or regemm@ozemail.com.au.

Don't forget those Foundation Tutor CD-ROMs to complement the excellent WIA produced Foundation Licence manual. The Foundation Tutor is available from REAST's Education Officer Reg VK7KK for $3.50 if purchased with a Foundation Licence Manual - making it a total of $20. Or I can supply the CD on its own for $5.00 from Roger, VK7ARN.

We have also been privileged to have regular ATV broadcasts from the Domain each Wednesday night as part of the experimenters' nights. Our December 2005 meeting was our end of year BBQ and over 50 people attended through the day and night including Robert Broomhead, VK3KRB, and son Tim, who came along to the evening session. Robert was treated to the BPL tour before continuing on his Tasmanian holiday. Mike Harris, VK7ACQ has returned from overseas on his Churchill Fellowship studying the use of HF and digital modes and we were given a quick summary of the trip at the BBQ. REAST AGM is 5 February 2005 followed by a BYO BBQ.

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Reg VK7KK, VK7 WIA accredited assessor running through course material.

Marilyn VK7FMAZ, our first VK7 female foundation licensee who is also XYL of Dave, VK7KDO.

Christine Taylor VK5CTY

Remembering last year

This time last year we were in the midst of helping out the unfortunate victims of the tsunami, with, for YL amateurs the special knowledge that a YL amateur, Bharti VU4RBI, who just happened to be in the Andaman Islands when the tragedy struck, rose to the occasion magnificently. I am sure there were a number of other YL amateurs who also assisted with communications at the time, but Bharti is the only one identified by name, so she is the one we saw as representing YLs everywhere.

As an amateur I am always ready to brag to the general public about the real contribution amateurs have made on so many occasions, when natural (and sometimes not-so-natural) disasters happen. With the John Moyle Memorial Field Day coming up in March I hope all amateurs take the opportunity to hone their mobile and portable skills – just in case!

If any YLs are engaged in the JMMFD, please let me know. I will be involved myself and know that several VK5 YLs will also be involved but I would love to be able to brag about some of you others, too.

As a reporter for ALARA I can only write about the news you send me. (I speak for Dot VK2DB, editor of our own Newsletter, too.) Please tell us what you are doing.

News from our YL associations overseas

The BYLARA magazine has a new look. A decision was made to show 'The Faces of BYLARA' on the front cover, so this issue has the first "Face" on it. A great idea. Too often we only hear each other and have no idea what we look like.

The YL in the UK have just participated in the Midwinter Contest run by the Dutch YL Committee. This is a January Contest with CW on the Saturday and SSB on the Sunday. As usual OMs are welcome in the YL Contest and as usual the most common comment is "What a friendly Contest it is". This is typical of all the YL Contests around the world. There is an exchange of numbers but there is always time to say "Hello, How have you been since last year?" or How are the family?" etc.

The "WARO" magazine from New Zealand is full of praise for the ALARAMEET in Mildura which is not surprising as the MEET was very successful and there were 14 ZLs at the MEET, but this issue of the WARO Bulletin also has information about the Thelma Souper Memorial Contest for 2006.

This Contest is held on 1st and 2nd of April from 0800 to 1000 Zulu on 80-metres only. It is open to all amateurs. To add to the fun, there is a Bonus station using the ZL6YL callsign for random periods. This will count as a multiplier on each night if worked.

All the details will be published elsewhere and it sounds like a lot of fun. Please participate.

Contacts made during the Contest also count towards the NZ WARO Award.

Some Silent Keys to report

Two SKs are early supporters of WARO and ALARA. Rae ZL1NI was one of the first members of WARO and remained a member for 40 years even though she was not on the air very often. Vicky ZL1OC was among the first group of YLs who envisioned having a National YL organisation back in about 1960. She served as President for two periods and encouraged the inauguration of the Thelma Souper Contest.

She and her OM Colin were also the very first ZL attendees to an ALARAMEET. They were in Adelaide in 1987 for the second ever get-together of VK YLs and the first one officially called an ALARAMEET.

Two DX members, now SKs are memorable. Jerrie K6INK was an early sponsored member of both ALARA and WARO, and contributed to the growth of both groups and Ruth LA6ZH who at the age of 82 attended the International YL 2000 MEET in Hamilton, will be remembered with pleasure by all there that year. Nothing daunted this lady. In New Zealand she rode the Luge Run and loved the white water experience on one of the rivers, as well as enjoying every part of the official program. We will remember them all with love and joy. Vale.

ALARA 30 year history

To celebrate our 30 years, a History has been prepared with photos from the albums embedded in the text. Unfortunately when the cost of printing 100 pages in colour was investigated it was felt that $100 a copy was rather exorbitant. Instead, a heat-bound copy of the book, printed in black and white is available for $30, with a CD attached which has all the photos on it, in colour where appropriate.

If you want any of the photos printed you should be able to take the CD along to your local photo shop and select the ones you want.

Please contact me Christine VK5CTY email geencee@picknowl.com.au or QTHR the callbook, by snail mail.

AMSAT

Bill Magnusson VK3JT

Posat set to return to amateur radio service soon

There has been some encouraging news from AMSAT-UK recently on the expected change over of Posat from commercial service back to the amateur service.

Posat was built at Surrey Satellite Technology and has served out its planned commercial service commitments. A few months ago, after some negotiation between AMSAT-UK and Surrey Satellite technology it was announced that Posat would be returned to the amateur radio community. This is great news as we have only recently seen the demise of the last such very capable digital bird.

Posat was built in the mould of the later UoSats and will have plenty of power available for store and forward communications much like UO-14 and 22/23/25 in their heydays. We can look forward with relish to resuming use of this type of satellite system and you can be sure that lots of WiSP and KCT/T tracking gear and high speed modems will be dusted off and brought back to life.

We still have not heard from the command team at Surrey as to the features which will be available. One can but hope that they will be able to activate the earth pointing camera as well as the store and forward bulletin board, hopefully at 38k4 speed.

We have to remember of course that the command team are very busy people and they will probably opt for a mode that requires as little as possible hands-on attention on their part. When the arrangements have been worked out they will probably be announced first on the AMSAT-UK web site.

The AMSAT group in Australia

The National Co-ordinator of AMSAT-VK is Graham Ratcliff VK5AGR. No formal application is necessary for membership and no membership fees apply. Graham maintains an e-mail mailing list for breaking news and such things as software releases. Contact Graham if you wish to be placed on the mailing list.

AMSAT-Australia Echolink Net

The net meets formally on the second Sunday of each month. Anyone with an interest in Amateur Radio Satellites is welcome to join in and take part. Graham VK5AGR acts as net controller. The net starts at 0600UTC and you can join in by connecting to the AMSAT conference server.

All communication regarding AMSAT-Australia matters can be addressed to:

AMSAT-VK,
9 Homer Rd,
Clarence Park, SA. 5034

Graham's e-mail address is:
vk5agr@amsat.org

FM usage – some thoughts

It's been interesting to follow the discussion on the BB regarding the use of FM on linear transponders.

FM is seen today as one of the "easy-sat" ways of getting newcomers into amateur radio satellite work. This has proved to be true and it is often used to justify requests for extra mode scheduling and to argue for more simple FM mode "easy-sats". Quite a number of satellites have been launched in recent years having this facility and many operators have embraced them and work them regularly with very simple gear.

Some like AO-51 with its 2.4 GHz downlink give operators the chance to "wet their feet" on microwaves as well. They are eminently suitable for this purpose. They have their problems though in areas of high usage like the USA and Europe. Essentially they are single channel devices and the capture effect of FM comes into play.

Satellite designers have turned to sub-audible tone access and other means to minimise interference and generally these schemes work well.

There was however a time before FM birds when linear transponders were the norm. The problem of continuous mode operation has been around since that time. In those days it was frowned upon and vehemently discouraged to use any continuous carrier mode on a linear transponder.

The reasons were well known and publicised. Even one or two FM or AM or SSTV stations in the pass-band of a linear transponder and the power drain on the limited resources means that everyone's signals are attenuated, right across the pass-band.

In effect a linear transponder capable of sustaining a score of properly managed SSB contacts can be rendered useless for everyone. Memories dim somewhat over the years and recently there seems to be a push for FM to be allowed or tolerated on linear transponders.

A number of gurus have been coming out of the woodwork, explaining in clear terms on the BB why this situation ought not be allowed to become entrenched. Many see it as the thin edge of a wedge which may make the SSB linear transponders unusable if encouraged or allowed to become routine. In fairness, some of the suggestions have not been for willy-nilly use of FM but rather for "FM-days" being scheduled on the linear transponder birds.

Counter arguments to this idea have pointed out the number of FM birds already available and the possibility of entrenching ideas like "It's OK to use FM on the linear birds, we do it on FM days so why not all the time?".

If I was to offer an opinion, I'd side with the gurus and urge that the SSB linear transponders be left for non-continuous modes. We have two more high orbiters on the slate, one due for launch next year.

It would be a pity to see their transponders treated like easy-sats. They are not meant to be. They are meant to offer a challenge for those who want to move on and try to keep their station abreast of latest developments.

The idea of easy-sats has come of age and they are now firmly on the agenda for satellite designers and builders. So are the high orbiters. So are the linear transponders. I believe they each have their distinct place in the AMSAT scheme of things.

SuitSat deployment delay

Frank H. Bauer KA3HDO, AMSAT V.P. for Human Spaceflight Programs and ARISS International Chairman announced in late November that he had received information that the ISS spacewalk that will deploy SuitSat and which was planned for December 8, has been delayed to late January/early February 2006. The reason given was the cancellation of a Shuttle mission and the subsequent 'stretching' of the on-board scheduling that this dictated. Make use of the time by reading up on the SuitSat project and readying your station for the event.

Six-monthly review of operational satellites in the amateur radio service

This report is compiled from information gleaned from the AMSAT bulletin board and reports from the 'real world'. It's offered as a guide only and you should check the various sources for the latest information before operating. I make no mention of the many non-operational satellites still in orbit or those which are turned off in our part of the world. Satellites like AO-10 and UO-11 for example have become too unreliable to feature as "operational".

VO-52 HAMSAT

Catalogue Number: 28650

Launch Date: May 05,2005

Status: Testing

Current Mode: U/V – Dutch Transponder

Proposed frequencies:

Indian Transponder:

Uplink : 435.220 MHz to 435.280 MHz LSB/CW

Downlink: 145.870 MHz to 145.930 MHz USB/CW

Beacon : 145.859 MHz CW

Dutch Transponder:

Uplink : 435.225MHz to 435.275MHz LSB/CW

Downlink: 145.875MHz to 145.925MHz USB/CW

Beacon : 145.860MHz 12WPM with CW message

The "Dutch" transponder was turned on recently and from all reports it is working very well with good signal strength. Congratulations to William Leijenaar, PE1RAH who designed, built and largely financed the Dutch transponder himself. Hearty congratulations too to the HAMSAT team who worked so hard to integrate William's transponder into VO-52 and bring it on line faultlessly.

AO-51 ECHO

Catalogue number: 28375

Launch date: June 29, 2004

Status: Testing

Current Mode: (volatile! see AMSAT web site)

Voice Repeater - V/U FM

Analogue voice downlink: 435.300 MHz FM, 435.150 MHz FM

Analogue voice uplink: 145.880 MHz FM

145.920 MHz FM 67Hz PL tone

1268.700 MHz FM 67Hz PL tone

Digital Downlinks: 435.150 MHz FM, 38k4 Digital, PBP, 1 watt output

2401.200 MHz FM 38k4 bps, AX.25

Digital Uplink: 145.860 MHz FM, 9k6 Digital, Pacsat Broadcast

Protocol (PBP)

Broadcast: PECHO-11, BBS: PECHO-12

To give as many users as possible a 'fair-go', AO-51 is subject to frequent mode changes. The only realistic way to keep on top of these changes is to go to the AMSAT-NA web site. The detailed AO-51 schedule is accessible from the front page. The frequency schedule printed above doesn't look right to me but that's what the latest AMSAT satellite schedule says. My advice to potential users would be to check everything using the official schedule on the day you are planning to operate. This satellite has a heap of mode possibilities and that makes for a complicated scheduling arrangement. But, on the other hand, AO-51 has something for everyone.

SO-50 SAUDISAT-1C

Catalogue number: 27607

Launched: December 20, 2002

Status: Operational.

Uplink: 145.850 MHz (67.0 Hz PL tone)

Downlink: 436.795 MHz

To switch the transmitter on, you need to send a CTCSS tone of 74.4 Hz.

The order of operation is thus: (allow for Doppler as necessary)

Transmit briefly on 145.850 MHz with a tone of 74.4 Hz to arm the 10 minute timer.

Now transmit on 145.850 MHz (FM Voice) using 67.0 Hz to PT the repeater on and off within the 10 Minute window.

Sending the 74.4 tone again within the 10 minute window will reset timer.

FO-29 JAS-2

Catalogue number: 24278

Launch Date: August 17, 1996

Status: Operational

Voice/CW Mode JA

Uplink: 145.90 to 146.00 MHz CW/LSB

Downlink: 435.80 to 435.90 MHz CW/USB

Beacon: 435.795 MHz

Digital Mode JD

Uplink: 145.850 145.870 145.910 MHz FM

Downlink: 435.910 MHz 1200-baud BPSK or 9600-baud FSK

Callsign: 8J1JCS

Digitalker: 435.910 MHz

AO-7 AMSAT OSCAR 7

Catalogue number: 07530

Launch Date: November 15, 1974

Status: Semi-operational in sunlight.

Return to active status: June 21, 2002

Uplink: 145.850 to 145.950 MHz CW/USB Mode A

432.125 to 432.175 MHz CW/LSB Mode B

Downlink: 29.400 to 29.500 MHz CW/USB Mode A

145.975 to 145.925 MHz CW/USB Mode B

Beacon: 29.502 MHz, 145.972 MHz, 435.1 MHz, 2304.1 MHz

Don't expect too much from AO-7. It will often disappoint but when it goes it's a ripper. The orbit is almost circular with an average height of 1450km giving it the widest footprint of any satellite we have operating at present.

International Space Station (ISS) - ARISS

Catalogue number: 25544

Launch date: November 20, 1998

Status: Lots of activity, voice and digital.

The current Expedition 12 crew is:

Commander: William McArthur - KC5ACR

Flight Engineer: Valery Tokarev - (no call)

Worldwide packet uplink: 145.990 MHz FM

Region 1 voice uplink: 145.200 MHz FM

Region 2/3 voice uplink: 144.490 MHz FM

Worldwide downlink: 145.800 MHz FM

Repeater Uplink: 437.800 MHz FM

Repeater Downlink: 145.800 MHz FM

Russian callsigns: RS0ISS, RZ3DZR

USA callsign: NA1SS

Packet station mailbox callsign: RS0ISS-11

Packet station keyboard callsign: RS0ISS-3

Digipeater callsign: ARISS

The ISS daily crew schedule can be found at:

http://spaceflight.nasa.gov/station/timelines/

Remember that the crew operates on UTC time and sleep is a regular part of their daily schedule. Familiarise yourself with the daily schedule and down-load the latest keps if you want to be successful in working ISS.

PCSAT2

Catalogue Number: 25544

Launch Date: August 1, 2005

Status: Battery-saving mode

Digital Downlink: 435.275 MHz

Digital Uplink: 145.825 MHz

PSK-31 Downlink: 435.275 MHz

PSK-31 Uplink: 29.400 - 29.403 MHz

PCSAT2 is installed on the exterior of the International Space Station and was activated on August 3, 2005.

More information on PCSAT2 can be found at:

http://web.usna.navy.mil/~bruninga/pcsat2.html

NO-44 PCSAT

Catalogue number: 26931

Launch Date: September 30, 2001

Status: Operational

General Usage Uplink/Downlink: 145.827 MHz 1200 Baud

Special Usage Downlink: 144.390 MHz 1200 Baud

PCSat is a 1200-baud APRS digipeater designed for use by stations using hand-held or mobile transceivers. Downlinks feed a central web site at:

http://pcsat.aprs.org

GO-32 TECHSAT-1B

Catalogue number: 25397

Launch Date: July 10, 1998

Status: Operational

Downlink: 435.225 MHz FM (9600-baud FSK)

(435.325 n/a - temperature problems)

Uplinks: 145.850, 145.890, 145.930 FM

1269.700, 1269.800, 1269.900 FM

Broadcast Callsign: 4XTECH-11

BBS Callsign: 4XTECH-12

A few reports of this satellite come in from time to time. I haven't heard it working for a long time.

AO-16 PACSAT

Catalogue number: 20439

Launch Date: January 22, 1990

Status: Semi-operational, the digipeater command is on and open for APRS users.

Uplink: 145.90 145.92 145.94 145.96 MHz FM (using 1200-baud Manchester FSK)

Downlink: 437.026 MHz SSB (1200-baud PSK)

Mode-S Beacon: 2401.1428 MHz

Broadcast Callsign: PACSAT-11

BBS: PACSAT-12

Again, I can't hear anything from AO-16 yet the occasional report says it's going. Good luck.

Soon to appear over the horizon (we hope):

SuitSat should be in operation in early February.

Phase-3E is on schedule for a launch in 2006.

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KVK Antenna Systems

The VK Antenna Handbook for Restricted Spaces

Packed with information on restricted space designs.

The NuBeam Antenna

A reduced size multi-band 2-element beam.

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For credit card purchases: www.kvkantennas.com.au or ph 07-3216 8060 or fx 07-3216 8075

Are you managing the estate of a 'Silent key'?

Please save any QSLs for the National QSL collection, but first contact:

The Hon. Curator,
Ken Matchett VK3TL
on (03) 9728 5350
or email: jeandawson@iinet.net.au

Rare DX, special call-signs prefixes and suffixes, pictorials and pre-war QSLs are needed.

Let us save something for the history of amateur radio.

Ian Godsil VK3JS
National Contests Co-ordinator

Contest Calendar February - April 2006

Feb	4/5	Mexico Intl. RTTY Contest	(RTTY)
	11/12	CQ WW RTTY WPX Contest	(RTTY)
	11	Asia-Pacific Sprint	(CW)
	11/12	RSGB 160 Metres Contest	(CW)
	18/19	ARRL Intl. DX Contest	(CW)
	24/25	Russian PSK WW Contest	(PSK31)
	25/26	CW WW 160 Metres Contest	(SSB)
Mar	4/5	ARRL Intl. DX Contest	(SSB)
	11/12	RSGB Commonwealth Contest	(CW)
	18/19	John Moyle Field Day	(CW/SSB/FM)
	18/20	BARTG RTTY Contest	(RTTY)
	18/19	Russian DX Contest	(CW/SSB)
	25/26	CQ WW WPX Contest	(SSB)
Apr	1/2	SP DX Contest	(CW/SSB)
	1/2	EA RTTY Contest	(RTTY)
	8/9	Japan Intl. DX Contest	(CW)
	15	Holyland DX Contest	(CW/SSB)
	15/16	YU DX Contest	(CW/SSB)
	22/23	Helvetia Contest	(CW/SSB)
	22	Harry Angel Sprint	(CW/SSB)

Greetings to all Readers—

Well, another year is under way – more hopes and challenges or more worries and despair, depending on your circumstances.

Many of you will have heard the new Callsigns making good use of the conditions on 10 metres over the Christmas/New Year period. In welcoming these operators to Amateur Radio, may I hope that they will take an interest in Contests as one of the many facets of our hobby.

Perhaps this year we may need to consider variations to the rules of some of our VK contests in order to encourage these newcomers to the field. Perhaps they themselves will suggest ways that will help them to become involved.

However the year will progress, please all of you feel free to write to me at any time with your ideas.

As a starting point for our 2006 calendar please see below the results of the Spring Field Day and the John Moyle Field Day rules. This is a very popular event, so please note the dates and try to be part of it.

A good year, good DX and good contesting to you all.

73, Ian Godsil VK3JS

Spring VHF-UHF Field Day 2005: Results

Contest Manager: John Martin VK3KWA
vhf-contests@wia.org.au

It was good to see a number of callsigns that haven't appeared in the list before. Activity has increased in VK5, and especially in VK4. In the single operator sections, the number of 24 hour stations increased while the 6 hour stations decreased. This is the opposite of the trend in recent years, and I think it reinforces the growing feeling that the "short" sections should be increased from six hours to eight.

Congratulations to the winners of each section, and to all entrants – especially the new ones – for achieving really good scores. This is a fun event, so spread the word and let's get a record number of stations active next time.

Call	Name	Location	6m	2 m	70 cm	23 cm	12 cm	9 cm	6 cm	3 cm	TOTAL
Section A: Single Operator, 24 Hours											
VK4OE	D. Friend	QG51, 52, 61	-	399	515	696	660	-	-	-	2270
VK2TWR	R. Collman	QF44	59	567	830	312	-	-	-	-	1768
VK3HY	G. Brain	QF32	73	486	760	432	-	-	-	-	1751
VK3BJM	B. Miller	QF13	72	313	770	376	-	-	-	-	1531
VK4DMC	D. McCarthy	QH22	37	159	135	-	-	-	-	-	331
VK1AI	G. Parkhurst	QF44	-	282	-	-	-	-	-	-	282
Section B: Single Operator, 6 Hours											
VK5DK	C. Hutchesson	QF02	32	129	160	256	210	-	220	330	1207
VK5ZUC	A. Russell	PF95	52	225	290	360	-	-	-	-	927
VK5AR	A. Raftery	PF94, 95	24	198	250	-	-	-	-	-	472

Call	Name	Location	6m	2 m	70 cm	23 cm	12 cm	9 cm	6 cm	3 cm	TOTAL
Section C: Multi Operator, 24 Hours											
VK3ATL	Geelong ARC	QF21	128	576	755	976	800	210	220	330	3995
VK3III	Horsham ARC	QF12	96	591	745	584	-	-	-	-	2016
VK5OM	VK5OM, 3LY, 3AQX	QF03	83	556	740	584	-	-	-	-	1963
VK4WAT	Tableland R&EC	QH22	108	429	450	344	-	-	-	-	1331
VK3SOL	Shepparton DARC	QF24	55	246	410	440	-	-	-	-	1151
Section D: Multi Operator, 6 Hours											
VK5SR	SE Radio Group	QF02	55	348	460	456	320	210	210	210	2269
VK5OM	VK5OM, 3LY, 3AQX	QF03	55	357	425	448	-	-	-	-	1285
VK3SB	VK3SB, 3FLI	QF22	-	168	280	-	-	-	-	-	448
VK5LZ	Elizabeth ARC	PF95	48	159	195	-	-	-	-	-	402

Call	Name	Location	6m	2 m	70 cm	23 cm	12 cm	9 cm	6 cm	3 cm	TOTAL
Section E: Home Station, 24 Hours											
VK3EK	R. Ashlin	QF32	56	300	435	272	240	-	-	-	1273
VK4BEG	R. Norton	QH22	92	324	440	296	-	-	-	-	1152
VK3KAI	P. Freeman	QF31	-	201	280	344	320	-	-	-	1145
VK3UDX	G. Beadle	QF22	33	183	305	168	-	-	-	--	689
VK4AQ	J. R. Anderson	QH32	79	288	140	-	-	-	-	-	507
VK1WJ	W. Jirgens	QF44	26	120	135	-	-	-	-	-	281
VK5KMC	M. Clarke	PF95	-	105	170	-	-	-	-	-	275
VK5PAV	D. Stubbs	Check log									

John Moyle Memorial Field Day Contest 2006

Presented by Denis Johnstone VK3ZUX

18 - 19 March, 2006

0100 UTC Sat - 0059 Sun

I wish all entrants good luck, and look forward to hearing you on air during the contest!

N.B. new Email address: jmfd2006@wia.org.au and/or check out latest info at http://www.wia.org.au/contests/

Overview

1. The aim is to encourage and provide familiarisation with portable operation, and provide training for emergency situations. The rules are therefore designed to encourage field operation.
2. The contest takes place on the 3rd full weekend in March each year, and runs from 0100 UTC Saturday to 0059 UTC Sunday, 18-19 March 2006.
3. The contest is open to all VK, ZL and P2 stations. Other stations are welcome to participate, but can only claim points for contacts with VK, ZL and P2 stations.
4. Single operator portable entries shall consist of ONE choice from each of the following (e.g. 6 hour, portable, phone, VHF/UHF):
   a 24 or 6 hour;
   b Phone, CW, or All modes;
   c HF, VHF/UHF or All Bands.
5. Multi-operator portable entries shall consist of ONE choice from each of the following (e.g. 24 hour, portable, phone, VHF/UHF):
   a 24 or 6 hour;
   b Phone, CW, or All modes;
   c HF, VHF/UHF or All Bands.
6. Home and SWL single operator entries may be either 24 hour or 6 hours, all modes, all bands.

Scoring

7. Portable HF stations shall score 2 points per QSO.
8. Portable stations shall score the following on 6m:
   a 0-49 km, 2 points per QSO;
   b 50-99 km, 10 points per QSO;
   c 100-149 km 20 points per QSO;
   d 150-299 km 30 points per QSO;
   e 300-499 km 50 points per QSO;
   f 500 km and greater, 2 points per QSO.
9. Portable stations shall score the following on 144MHz and higher:
   a 0 to 49 km, 2 points per QSO;
   b 50 to 99 km, 10 points per QSO;
   c 100 to 149 km, 20 points per QSO;
   d 150 to 300km, 30 points per QSO.
   e 300 kms and greater, 50 points per QSO.
10. For each VHF/UHF QSO where more than 2 points is claimed, either the latitude and longitude of the station contacted or other satisfactory proof of distance such as the 6-figure Maidenhead Locator must be supplied.
11. Home stations shall score:
   a Two points per QSO with each portable station.
   b One point per QSO with other home stations.

Log Submission

12. For each contact: UTC time, frequency, station worked, RST/serial numbers sent/received and claimed score. (VHF and above location of other station and distance showing the Lat Long or Maidenhead Locator to 6 figures for the station worked.)
13. Logs must be accompanied by a summary sheet showing: call sign, name, mailing address, section entered, number of contacts, claimed score, location of the station during the contest, and equipment used, and a signed declaration stating "I hereby declare that this station was operated in accordance with the rules and spirit of the contest and that the contest manager's decision will be accepted as final". For multi-operator stations, the names and call signs (legible) of all operators must be listed.
14. Paper logs may be posted to "John Moyle Contest Manager, P.O. Box 8739 Alice Springs NT 0871 " Alternatively, logs may be e-mailed jmfd2006@wia.org.au or to VK3ZUX@hotmail.com or mailed via the WIA Contest Manager JMMFD, P.O. Box 2175 Caulfield Junction, VIC 3161. The following formats are acceptable: ASCII text or Microsoft Word or Excel and electronic log programs such as VKCL. Logs sent by disc or e-mail must include a summary sheet and declaration, but the operator's

name (legible) is acceptable in lieu of a signature. Logs must be postmarked no later than 30 April 2006.

Certificates and Trophy

15 At the discretion of the Contest Manager, certificates will be awarded to the winners of each portable section. Additional certificates may be awarded where operation merits it. Note that entrants in a 24 hour section are ineligible for awards in a 6 hour section.

16 The Australian portable station, CW section, with the highest CW score will be awarded the President's Cup, a perpetual trophy held at the Executive Office, and will receive an individually inscribed wall plaque as permanent recognition.

Disqualification

17 General WIA contest disqualification criteria, as published in Amateur Radio from time to time, applies to entries in this contest. Logs which are illegible or excessively untidy are also liable to be disqualified.

Definitions

18 A portable station comprises field equipment operating from a power source, e.g. batteries, portable generator, solar power, wind power, independent of any permanent facilities, which is the normal location of any amateur station.

19 All equipment comprising the portable station must be located within an 800m diameter circle.

20 A single operator station is where one person performs all operating, logging, and spotting functions.

21 A single operator may only use a call-sign of which he/she is the official holder. A single operator may not use a call-sign belonging to any group, club or organisation for which he/she is a sponsor except as part of a multi-operator entry.

22 A multi-operator station is where more than one person operates, checks for duplicates, keeps the log, performs spotting, etc.

23 A multi-operator station may use only one call sign during the contest.

24 Multi-operator stations may only use one transmitter on each band at any one time, regardless of the mode in use.

25 Multi-operator stations must use a separate log for each band.

26 Logs submitted electronically can use a separate excel worksheet for each band linked to a summary sheet. A typical example is shown at http://www.wia.org.au/contests/ which can be copied and adapted for the individual use of either single or multi-operators station.

27 A station operated by a club, group, or organisation will be considered to be multi-operator by default.

28 None of the portable field equipment may be erected on the site earlier than 28 hours before the beginning of the contest.

29 Single operator stations may receive moderate assistance prior to and during the contest, except for operating, logging and spotting. The practice of clubs or groups providing massive logistic support to a single operator is, however, totally against the spirit of the contest. Offenders will be disqualified, and at the discretion of the manager, may be banned from further participation in the contest for a period of up to 3 years.

30 Phone includes SSB, AM and FM.

31 CW includes CW, RTTY, and packet.

32 It is not expected that any other modes will be used in the contest, but if they are, they shall be classed as CW.

33 All amateur bands may be used except 10, 18 and 24 MHz. VHF/UHF means all amateur bands above 30 MHz. Note: On 50 MHz, the region below 50.150 has been declared a contest free zone, and contest CQ's and exchanges may only take place above this frequency. Stations violating this rule will be disqualified.

34 Cross-band, cross-mode and contacts made via repeaters or satellites are not permitted for contest credit. However, repeaters may be used to arrange a contact on another frequency where a repeater is not used for the contact.

35 Stations may make repeat contacts and claim full points for each one. For this purpose, the contest is divided into eight consecutive three-hour blocks: 0100-0359, 0400-0659, 0700-0959, 1000-1259, 1300-1559, 1600-1859, 1900-2159, 2200-0059 UTC. If you work a station at 0359 UTC a repeat contact may be made after the start of a new block providing, they are not consecutive or are separated by at least five minutes, since the previous valid contact with that station on the same band and mode.

36 Stations must exchange ciphers comprising RS(T) plus a 3 digit number commencing at 001 and incrementing by one for each contact.

37 Portable stations shall add the letter "P" to their own cipher, e.g. 59001P.

38 Multi-operator stations are to commence numbering on each band with 001.

39 Receiving stations must record the ciphers sent by both stations being logged. QSO points will be on the same basis as for Home Stations, unless the receiving station is portable.

40 The practice of commencing operation and later selecting the most profitable operational period within the allocated contest times is not in the spirit of the contest, and shall result in disqualification. The period of operation commences with the first contact on any band or mode, and finishes either 6 or 24 hours later.

If anyone wishes to contact me privately to discuss rules etc, my home phone number is (08) 8955 5642, and my snail mail and e-mail address is as shown in the Log Submission section above.

Plan ahead

Harry Angel Sprint

April 22

DX News & Views

John Bazley VK4OQ,
P.O. Box 7665, Toowoomba Mail Centre, QLD 4352.
Email: john.bazley@bigpond.com

I hope you were successful in working the Peter 1 Dxpedition at least on one band, for it may be a few years before we see activity from there again.

What has the New Year in store in the way of other DX? The forecast is a little time before we hit 'bottom' of the current cycle. Can we expect activity from Navassa and/or Desocheo in 2006 (as I started writing this in late December I never envisaged that we would see activity from Desocheo in 2005!)

So what have we to look forward to?

Tanzania - A large group of operators from the Provins ARS (namely F4AJQ, F6AML, F5JSD, F5VHQ, F9IE, F8BJI, F8BUI, F2VX and F8IXZ) will be active as 5H1C from Zanzibar Island (AF-032) from 24 January to 2 February. They plan to operate on 10-160 metres CW, SSB and digital modes (PSK, RTTY, SSTV). QSL via F5TVG, direct (Franck Savoldi, P.O. Box 92, 94223 Charenton Cedex, France) or bureau. Full information on the operation can be found at http://5h1c.free.fr/index.html .

Chad - Philippe, F4EGS will be in Chad from 25 December until the end of February, and during May-July 2006, operating as TT8PK on 10-20 metres (10-40m if he can obtain another antenna) on digital modes with some SSB. You can e-mail Philippe (kochp@wanadoo.fr) and let him know which bands you need Chad on. QSL via F4EGS.

Pete, SM5GMZ will be back in Thailand and Cambodia between December and March. He will operate CW, SSB, PSK31 and RTTY as much as possible in his spare time. From 6th January he will operate on all bands, 6 metres included, as XU7ADI for at least two months.

OPERATORS NEEDED: Frosty, K5LBU and three others will be active from Mozambique between 29 June and 13 July, IARU Contest included, with two complete stations and to operate CW, SSB, RTTY, PSK and EME. Those interested in joining the team are invited to contact Frosty (frosty1@pdq.net).

QSL 7Q7RM: Allan, G0IAS now has the late Ron Macfarlane's logbooks, dating back to 1947-54 when Ron was GM3EAK. They cover all QSOs (HF and 6 metres) made as either ZD6RM (when Malawi was called Nyasaland) and 7Q7RM until Ron's death. Allan says they "will stay open for one year, then they will be closed and destroyed". QSL direct only to Allan Hickman, The Conifers, High Street, Elkesley, Retford, Nottingham DN22 8AJ, UK.

P40LE (Andy-K2LE), will be active from 30th January until 1st March and will participate in the ARRL-DX-CW (18-19February). QSL to his home call.

C6ASB (Steve-AK0M), operating 15th -22nd February including the ARRL-DX-CW (18-19Feb). QSL to his home call.

Japanese operators JI5USJ, Toru, and JI5RPT, Makoto, will operate from Chichijima Island (AS-031), Ogasawara during late February 2006, with three stations, two with kWs. Activity will start around 0400Z on February 19th and end 2200Z on February 28th. They will be QRV on CW, SSB, RTTY, and PSK31 on 10 through 160 metres including Satellite (VO-52 and FO-29). Single verticals on 80 and 160 metres. On 40 they will have a pair of phased verticals. On 10-20 metres two element beams. No mention of 30 metre antennas but they will be active on that band. Toru will be operating as JD1BLX (SSB, RTTY and CW), while Makoto will be active as JD1BLY (CW only). Suggested frequencies are: CW 1.821, 1.910 (for JA), 3.511, 7.011, 10.114, 14.040, 18.098, 21.040, 24.920, 28.040 MHz. SSB 3.5 (for JA), 3.795, 7.050/7227 (for USA), 14.255, 18.128, 21.260, 24.960, 28.460 MHz. QSL JD1BLX via JI5USJ either via the bureau or direct to Toru Koyanagi, 400-6-1119 Nagasoneminami, Hikone Shiga 522-0052 Japan. QSL JD1BLY via JI5RPT also either via the bureau or to Makoto Koyanagi, 5-42-203, Kadan, Aoba, Sendai, Miyagi, 980-0815 Japan.

DJ7RJ, Willi, is considering doing a February-March 2006 DXpedition to the Dodecanese Islands (SV5) for 160 metre enthusiasts. If it is still on your wanted list for 160 Willi can be contacted via email at dj7rj@t-online.de.

The 1st official press release has been issued on the January 2006 warm up DXpedition to CE0Z - Juan Fernandez Island. I say warm up as some of this team will then follow down south to Peter 1 Island (3Y0X) a few days later. The multi-national team will be QRV from Juan Fernandez starting January 20th until the 28th. Plans are to be active on all bands and modes around the clock. The group will use the call CE0Z. This is not the first time this callsign has been issued, and was last used in September 1995. The team is authorised to operate on 30 metres, not normally allowed in Chile. CE0Z Team will include the following members of the CE3BSQ Radio Club Manquehue (http://www.ce3bsq.cl/), from Santiago, Chile: CE3GL, Sergio (president); XQ3SA, Guillermo (team leader); CE3GRG, Juan; CE3VII, Hector; CE3BYL, Maite (YL); CE3GFN; Ignacio; CE5RH, Roberto; and CE3BFZ, Pedro. Joining them will be 3Y0X team members K4SV, Dave; F2JD, Gerard; N2WB, Bill; and N6OX, Bob. On the island they will set up three to four stations. They will have three QSL managers, each with all of the logs. Choose which one is best for you: CE3BSQ for Central and South America, N2OO for North America, Japan and others, and F6AJA for Europe and Africa. Again QSL requests may be sent to any of the managers. After the DXpedition they will upload their logs to LOTW. A website will be created.

G4WFQ, Dave, plans another DXpedition, this one to Senegal. Dave plans to be on all bands 160-10 m, mostly CW and RTTY, with some SSB. The dates: February 4-17, 2006. QSL via G3SWH direct with SAE or adequate return postage or via e-mail to phil@g3swh.demon.co.uk for a reply via the bureau - or the old-fashioned way via the RSGB bureau.

Nine members of the Texas DX Society are going to Malta for the ARRL DX SSB March 5-6. They are N5KTN, K5UO, N5DD, NM5G, W5PF, K5WAF, W5MJ, W9DX and WF5W. Inclusive dates on the island are March 1-8. Before and after the operating event they'll be on CW, SSB, RTTY and PSK, with antennas for all bands 160-10 m.

Special thanks to the authors of *The Daily DX* (W3UR) and 425 *Dx News* (I1JQJ) and QTC DX PY2AA for information appearing in this month's *DX News & Views*. Interested readers can obtain from W3UR a free two week trial from www.dailydx.com /order.htm

WIA DXCC standings

(335 entities) (31st. December. 2005)

Callsign	Countries
DXCC Ex.(335)Phone	
VK5MS	335/389
VK4LC	335/382
VE6VK	335/372
VK4UA	335/370
VK5WO	335/368
VK6LK	335/360
VK3AMK	335/354
VK3QI	335/349
VK3AKK	335/348
VK2FGI	335/341
VK3DYL	335/341
VK3EW	335/341
VK3SX	335/341
Honour Roll(326)Phone	
VK6HD	334/360
VK6NE	333/349
VK2AVZ	333/344
VK1ZL	333/339
VK2DEJ	333/339
CT1EEN	332/336
VK3OT	331/345
VK4OH	330/337
VK6APK	330/335
VK4AAR	330/334
VK3CSR	329/338
VK3YJ	327/333
VK5FV	326/329
VK4SJ	326/327
General listing-Phone	
VK7BC	324/329
EA3AKN	323/331
VK3EUZ	323/324
VK6ABS	322/000
VK2UK	320/325
VK4LV	319/321
VK1TX	319/000
VK6RO	312/319
VK3JI	310/325
VK6LC	309/312
DL2AWG	309/000
PY2DBU	308/315
VK4ICU	303/305
VK6DY	297/301
JA3EY	296/300
VK4EJ	296/298
DL1TC	294/295
VK3DU	292/301
VK2CSZ	290/293
VK2HV	288/000
VK4BAY	287/290
VK3KE	286/289
VK7TS	285/286
9V1RH	283/285
VK6ANC	282/286
VK2CA	286/000
VK3JMB	275/000
VK3DP	274/277
VK3UY	264/266
JA7MGP	260/000
VK2XH	257/000
DL3ASJ	256/000
VK8NSB	255/000
VK3CIM	254/258

Callsign	Countries
General listing-Phone	
VK8DK	253/254
VK2FHN	243/000
VK4AO	240/000
VK8KTC	231/233
VK4DMP	227/228
UA6LDD	225/226
VK8AM	225/000
VK2AU	210/000
VK3DVT	206/209
VK7JAB	198/000
VK2EO	195/000
VK6RZ	187/190
G0VXX	184/000
VK3PA	178/179
9A2KL	172/175
VK6EH	170/000
VK2EJK	169/000
VK2BQS	166/169
DL6USA	162/000
VK5EMI	160/000
VK7LUV	160/000
VK4ARB	159/160
JA6KTY	156/000
VK6HZ	151/000
VK2SPS	143/145
VK3JXO	141/000
VK2QV	141/000
VK3DQ	138/152
VK8LC	137/000
OK1ZSV	136/000
DL9UBF	133/134
SV1XV	130/131
VK4FNQ	130/000
WA5UA	128/000
VK4VIS	127/129
VK5ATU	126/128
VK2IRP	125/101
CU3AAT	125/000
VK2VZQ	122/000
VK4EZ	119/125
VK5UO	112/115
VK3CML	109/000
SV1EOS	105/000
AX4EJ	105/000
VK9RS	104/000
VK6ISL	102/000
SV1GYG	102/000
SV1FTY	102/000
3W2LC	102/000
HS1NGR	101/000
VK6ZAI	100/000
VK5JAZ	100/000
DXCC Ex.(335)CW	
Honour Roll(326)CW	
VK6HD	334/355
VK3QI	334/346
VK5WO	332/348
VE6VK	329/356
General listing-CW	
VK6RZ	315/320
VK3AKK	312/317
VK3KS	307/335
VK4LV	299/306

Callsign	Countries
General listing-CW	
CT1EEN	294/000
VK4ICU	291/000
VK3JI	274/299
VK6MK	249/252
VK7BC	246/255
VK2CWS	245/247
VK3DP	245/247
VK3DQ	243/270
VK3CIM	235/236
RD3AF	233/000
VK7TS	219/000
DL7PA	203/000
VK6RO	196/198
VK3KE	195/000
PY2DBU	179/181
VK4CXQ	174/000
VK5UO	171/172
SP9ADV	168/171
DK6AP	168/000
DL6USA	165/000
VK4UA	151/164
VK4AAR	144/146
VK8AM	138/000
N0TM	135/000
DL1TC	133/000
VK7DQ	131/132
DL6UGF	126/000
DJ4BG	121/000
VK5BWW	110/113
SM6GZN	110/111
T94VT	108/000
9A2KL	103/000
DL3GDS	102/000
VK2AR	100/103
DXCC Ex.(335)Open	
VK4LC	335/382
VE6VK	335/380
VK4UA	335/372
VK5WO	335/372
VK6HD	335/362
VK3AMK	335/354
VK3QI	335/350
VK3AKK	335/348
VK3EW	335/341
Honour Roll(326)Open	
VK3OT	334/348
VK7BC	334/343
VK2AVZ	333/344
CT1EEN	333/337
VK3UY	333/336
VK2UK	332/337
VK4AAR	332/336
PY2DBU	328/343
General listing-Open	
VK4LV	323/331
VK6RZ	323/329
VK3JI	322/351
VK6RO	321/328
VK4DV	315/330
VK4ICU	311/313
VK6LC	309/312
DL1TC	302/303
VK7TS	295/296

Callsign	Countries
General listing-Open	
PY2DBU	294/298
VK3KE	294/297
VK2HV	289/000
VK3CIM	284/288
VK6ANC	284/288
9A2KL	280/283
UA6LDD	279/280
VK3JMB	277/000
VK6MK	256/259
VK8NSB	256/000
VK3DQ	255/284
VK5UO	251/255
VK2CWS	251/253
VK2FHN	247/000
VK4DA	237/239
VK8AM	236/000
DL6USA	201/000
SP9ADV	200/203
VK3PA	187/188
VK2BQS	183/186
VK4CXQ	179/000
DL6UGF	161/000
VK5ATU	158/160
VK3VB	153/155
VK6HZ	151/000
DL9UBF	150/152
VK3JXO	146/000
VK2SPS	144/145
SV1XV	142/144
VK4EZ	140/147
ON9MCR	129/140
VK3OZ	126/127
VK7CQ	123/125
VK2AR	121/124
VK5DC	117/118
N0MSB	117/000
VK9RS	111/000
VK2AJE	109/000
UA0IGV	103/000
VK5GX	100/101
VK1AI	100/000
RA3BZ	100/000
General listing-Digital	
VK3EBP	253/255
VK3AMK	200/202
VK3KE	177/000
VK2BQS	126/128
DL4ARJ	120/000
CT1EEN	110/000
VK5RY	100/102
Gen-listing 2m. Open	
Postion Vacant	
Gen-listing 6m. Open	
VK4FNQ	137/000
CT1EEN	110/000
VK4ABW	109/000
VK6JQ	103/104
VK4CXQ	101/000
Gen-listing-Satellite	
VR2XMT	112/114
VK3XDQ	106/000
General listing-SWL	
DE2DAD	100/000

The following Stations listed are those that have not updated since year 2000, they are now archived 1.1.2006.
Phone: OK1ZSV, TG8NE, VK1PRG, VK2GSN, VK2MH, VK3KTO, VK3MRG, VK4CHB, VK4DA, VK4IL, VK6BH.
CW: K5QNM, UR5BCJ, VK3MRG, VK3VQ, VK4CHB.
Open: LU5DYV, VK3DP, VK3MRG, VK3VQ, VK4CHB. Digital: SP3CUG.
Awards information and down loadable files are available on our WIA website http://www.wia.org.au/awards/
or email to:awards@wia.org.au or W.I.A. Awards Manager P.O.Box 196. Cannington. Western Australia. 6987.

Mal Johnson VK6LC

Awards

Mal Johnson VK6LC

	Callsign	2m	6m	10m	12m	15m	17m	20m	30m	40m	80m	160m	Bands	Total	
1	VK6HD			303	256	320	286	329	295	328	312	238	9	2667	296.3
2	VK3EW			278	231	304	254	328	137	292	284	106	9	2214	246.0
3	CT1EEN		110	294	290	324	305	328	146	243	163		9	2203	244.8
4	PY2DBU			198	125	185	103	279	102				6	992	165.3
5	VK5WO			155		153		252		225	134		5	919	183.8
6	9V1RH				141	264	119	222		129			5	875	175.0
7	VK3PA			133		139		253		136	187		5	848	169.6
8	VK6LC			112		134		301		168	107		5	822	164.4
9	VK2CA			160	100	194	107	203					5	764	152.8
10	VK2DEJ					114		305		101			3	520	173.3
11	VK3KE			103		148		267					3	518	172.7
12	WA5UA			102		106		128					3	336	112.0
	Averaged		**110**	**184**	**191**	**199**	**196**	**279**	**170**	**203**	**198**	**172**	**5.8**	**1212.9**	**194.9**

WIA MultiBand DXCC Program 2005

9BDXCC

1. VK3EW David McAulay. "Open mode" 17th May 2005. (HR & DXCCE)
2. VK6HD. Mike Bazley. "Open mode" 28th August 2005. (HR & DXCCE)
3. CT1EEN. Samuel Pimenta. "Open mode" (SK) 29th July 2005.

5BDXCC "Classic Award" (10-15-20-40-80m.)

1. VK6LC. Malcolm Johnson. "Open mode" 1st June 2005 (HR)
2. VK3EW. David McAulay. "Phone mode" 1st June 2005. (HR & DXCCE)
3. VK5WO. Austin Condon. "Open mode" 1st June 2005. (HR)
4. VK3PA. Allan Greening. "Phone mode" 1st June 2005. (HR)
5. CT1EEN. Samuel Pimenta. "Open mode" (SK) 29th July 2005. (HR & DXCCE)
6. VK6HD. Mike Bazley. "Open mode" 28th August 2005. (HR & DXCCE)

5BDXCC "Premier Award"

1. VK3EW. David McAulay. "Open mode" 1st June 2005. (HR)
2. CT1EEN. Samuel Pimenta. "Open mode" (SK) . 29th July 2005. (HR & DXCCE)
3. 9V1RH. David Rankin. "Phone mode" 1st June 2005.
4. PY2DBU. Helio Carota. "Open mode"1st June 2005.
5. VK2CA. Allan Meredith. "Phone mode" 20th November 2005.

3BDXCC

1. VK6LC. Malcolm Johnson. "Phone mode" 1st June 2005.
2. VK2CA. Allan Meredith. "Phone mode" 1st June 2005..
3. 9V1RH. David Rankin. "Phone mode" 1st June 2005.
4. VK3KE. Jim Baxter. "Open mode" 1st June 2005.
5. VK2DEJ. John Saunders. "Phone mode" 1st June 2005.
6. CT1EEN. Samuel Pimenta. "Open mode" (SK) 29th July 2005.
7. PY2DBU. Helio Carota. "Open mode" 20th June 2005.
8. WA5UA. Robert Kyle. "Phone mode" 2nd November 2005.

(R.I.P. Samuel) WIA Awards Manager. Mal. VK6LC

DXing ending December 2005

Silent Key

William Hunter Jamieson VK2XXU

It is with deep regret that we record the passing of William Hunter Jamieson, VK2XXU, of Dunbogan, near Laurieton, NSW. He was known to his friends as Wilbur.

Wilbur passed away on Monday 28 November 2005, in hospital in Port Macquarie.

Wilbur was born in 1924. He spent much of his early years in the Hastings and Manning area. His father once owned the pub at Beechwood, and Wilbur went to school in both the Hastings and Manning areas. He attended Taree High School.

After completing his apprenticeship, Wilbur worked in the skilled metal trades in many establishments, including Garden Island. As a mature age student, he undertook tertiary study and gained his Bachelor of Mechanical Engineering degree.

He worked as a professional engineer with Carrier Air Conditioning and in later years with the NSW State Government.

He retired in the mid 1980's and moved to Dunbogan where he took up Amateur Radio as a hobby and became licensed as VK2XXU after studying for his licence. Wilbur was a member of the Oxley Region Amateur Radio Club. After serving a year as Secretary, he took on the position of Equipment Officer, a position that he held for many years. He still held this position at the time of his passing.

The Funeral Service was held at the Port Macquarie Crematorium on Friday, 2nd December. The Amateur Radio fraternity was well represented.

To his wife, Carol, and his family, we extend our deepest sympathy. Wilbur will always be remembered as "the perfect gentleman".

Vale: Wilbur Jamieson VK2XXU

Submitted on behalf of the Oxley Region Amateur Radio Club Inc by Henry Lundell VK2ZHE, Secretary. Thank you to Trevor Thatcher VK2TT for providing the details

ar.

Beyond our shores

David A. Pilley VK2AYD
vk2ayd@wia.org.au

UK

RSGB new president

The RSGB appointed a new president on January 1:

Angus Annan, MM1CCR, became the next president of the Radio Society of Great Britain (RSGB). On November 19, the Society's National Council elected Annan to the position for a two-year term. He will succeed Jeff Smith, MI0AEX, whom the Council had reappointed last May to continue serving through the new year because it wanted continuity of leadership in dealing with current challenges facing amateur radio in the UK. However, following a challenge based on the current wording of RSGB's Memorandum and Articles of Association, the RSGB Council, with the assent of President Smith, rescinded its earlier decision, leading to Annan's election. The RSGB Board plans to revisit its Memorandum and Articles with an eye toward updating the document.

(GB2RS)

CANADA

VLF record

With the H.F. bands being so poor, a few radio amateurs have turned to VLF. In Canada a new record has been made on 2,200 metres. Bill de Carle, VE2IQ, in Ontario recently received Lorne Scott Tilley, VE7TIL, from Vancouver. They were using a new digital operating mode known at Weak signal Operation Low Frequency (WOLF for short). It uses forward error correction similar to that used by deep space probes.

What makes this contact truly remarkable is that VE7TIL was transmitting with an input power of only 50 watts into a very inefficient antenna system. This resulted in his radiating less then 25 milliwatts of Effective Radiated Power to span the 3400 kilometre path.

VE2IQ's reception of VE7TIL's complete message occurred after 14 minutes with 100% certainty. Other modes such as slow speed CW that are normally employed to span such distances on 2200 metres would have taken in excess of an hour to send the same amount of data. And that without any assurance of error free reception at the decoding station receive point.

(AR Newsline)

USA

Dayton Hamvention

Planning ahead? The Dayton Hamvention is the largest in the world. It is said every Radio Amateur should once in his life make a sojourn to this great event. This year it is planned for 19-21 May and is held at Hara Arena in Trotwood, Ohio. Over 25,000 visitors are expected. So if you plan to attend this year you should be making your travel plans and accommodation now. Dayton Hamvention Web site is http://www.hamvention.org/

ALASKA

HAARP gets additional transmitters

We often say we would like more power – usually to compensate for the inefficient antenna system we are using. This isn't Amateur Radio, but I believe it is possibly the biggest transmitting station as regards e.r.p. in the world. Just hope it doesn't overflow into the Amateur bands!

HAARP is getting some new radio gear. This as Continental Electronics announces that it is ahead of schedule in delivering 132 ultra-low-noise transmitters to U.S. government contractor BAE Systems for use in the High-Frequency Active Auroral Research or HAARP program.

The installation at the HAARP facility near Gakona, Alaska began in 1993 with 18 transmitters. It expanded to 48 in 1998 and will grow to 180 transmitters. When the massive planar array for ionospheric research is completed in 2007, it will include a total of 180 ten kilowatt combined transmitters, which the company is upgrading specifically for the HAARP operation. The final expansion will bring the HAARP array to full power, with ERP increasing from 84 dBW to about 96 dBW.

According to Continental, the federal government is constructing the facility to conduct upper-atmospheric and solar-terrestrial research via a phased array transmitter. The goal is to learn more about the ionosphere, a section of the atmosphere ionized by solar radiation with natural electrical currents that can be modulated with radio signals.

(ARNewsline)

Silent key

Bruce Fleck VK2FS

It is my sad duty to inform you all of the passing of Bruce Fleck VK2FS of Sapphire north of Coffs Harbour. His death was unexpected though his illness was terminal.

Radio was Bruce's lifelong hobby. He built his first receiver in 1939, a crystal set, on which he heard then Prime Minister Menzies inform our nation that we were at War. Joining the Royal Australian Navy as soon as he was old enough, he became an ASDIC operator and served mostly on Corvettes.

A softly spoken, quiet, kind man, Bruce's career was science orientated. After completing his University Degree, he joined the Soil Conservation Service. At one time he had six Soil Conservation Research Stations "to keep and eye on" as he put it, but his main area of concern was the New South Wales coastline: all of it.

During his time at Griffith (NSW), he and his radio friends watched the skies with interest as the first Sputnik satellite circled the globe, even twice in one night, as his wife Alison recalls.

Bruce and Alison married in 1951 and had one daughter. Bruce is sadly missed by his wife Alison, daughter Susan, three grandchildren, one great-grandson, and the members of CHADARC Inc.

Vale Bruce Fleck VK2FS.

Submitted by Peter McAdam, VK2EVB

VHF/UHF – an expanding world

David Smith VK3HZ – vk3hz@wia.org.au
Leigh Rainbird VK2KRR – vk2krr@wia.org.au

Weak Signal

David Smith - VK3HZ

Welcome back from the season of excess – not only excess of food, drink and merriment with the relatives, but also an excess of substantial and diverse propagation conditions. It's almost a shame that AR takes a break over the Christmas/New Year period as it's generally one of the busiest times for VHF/UHF openings.

Tony Mann (VK6/SWL) reports that the first Indonesian tropo opening to Perth was observed late from 1600Z 12 November to 0015Z 13 November. He was receiving the 20-400 kW ERP analogue UHF TV carriers from central Java - on 495.25, 607.24976, 623.2493, 655.25025 and 671.24956. The opening was almost missed because the usual indicators, Geraldton TV on 555.224 and ABCRN FM on 99.7, were not very strong. No reports of any contacts have been received.

The first VK2 - ZL contact for the season occurred on 5 December. Ross VK2DVZ in Taree reports that at 0750Z, he worked Nick ZL1IU on 2 m with signal reports 55 each way. The opening continued until Nick went QRT at about 0745Z. At 0801Z they exchanged reports of 51 each way on 70 cm. QSB was significant on 70 cm and they had to work hard to make the contact.

On 15 December, a widespread Sporadic E opening occurred between VK8 and VK2/3/5. Leigh VK2KRR in The Rock (near Wagga Wagga) returned home from work late afternoon, switched on and found he was hearing the Alice Springs 6m beacon. He then listened on 2 m and, to his surprise, found the 2 m beacon loud and clear. He immediately rang Jeff VK8GF at Alice Springs who dropped tools and headed for home.

In the meantime Leigh posted a message on the VK-ZL logger to inform others and called Brian VK5UBC. Leigh found he could access the Alice Springs 2 m FM repeater and made contact with Jeff as he was driving home. Leigh also worked Charlie VK8HW on the repeater. Charlie could actually hear Leigh direct on his indoor dipole – impressive for over 1800 km.

Jeff arrived home and called on 144.1 SSB. His first contact was with Leigh who was receiving Jeff 5/9+20. Jeff then managed to work Rob VK1ZQR in Canberra (Jeff's 1st VK1 on 2m), David VK3HZ in Melbourne, Gary VK5ZK at Goolwa 60km south of Adelaide and Brian VK5UBC at Gawler 40km north of Adelaide.

In Melbourne, the VK8 2 m beacon was first heard at 0540Z up to S5. It remained audible - with some gaps - until 0655Z.

On 18 December, there was another Sporadic E opening, this time from VK4 to VK2/3. At around 0550Z, Leigh VK2KRR managed to work VK4ABW (Townsville), VK4MIK (Butchers Creek) and VK4FNQ (Charter Towers). Trevor VK3VG in north central Victoria reports working VK4FNQ (5/9), VK4ABW (5/9) and VK4MIK (5/2). Doug VK3UM reported hearing some voices from just north of Melbourne, but did not manage a contact. Joe VK7JG also reports hearing snippets of the VK4s.

On 24 December, Andy VK2AEH worked Nick ZL1IU on 2 m. John VK2TK also worked Nick at around this time, with signals peaking at S6 (over S3 noise).

On 31 December, Nick ZL1IU was in the thick of the action as the bands opened between ZL and VK2/3/4/7. Oddly, no other ZL stations could be heard in VK3. Robbie VK3EK near Bairnsdale was one of the first VK3s to work Nick, on both 2 m and 70 cm and continued to hear him for over nine hours. Stations who managed contacts on 2 m with Nick were VK2FZ (also 70 cm), VK2AWD, VK2AH, VK2BHO (also 70 cm), VK3DMW, VK3EK (also 70 cm), VK3ZYC, VK3KAI, VK3UH, VK3DUT, VK2BZE, VK3WRE, VK3BBB, VK2FHN, VK2BHO (also 70 cm), VK2DVZ, VK2EAH, VK2TG, VK2ZT, VK3TDV, VK3EBQ and VK3VHF.

The most westerly station worked on 2 m was David VK3QM in Lara. They also tried on 70cm but, apart from hearing traces of each other, were unable to complete a contact. Ron 3AFW and Andrew 3KAQ in Melbourne heard traces of Nick on 2 m, but no contact was achieved.

Rex VK7MO reports that, on New Years Eve, he returned home to see on the logger that Robbie VK3EK had been working into ZL. A quick CQ and Nick ZL1IU was worked 5/1 both ways on 2 m for a new VK7 record at 2431 km. Rex asked Nick if he would be around for a while as he would like to try 70 cm and had not rebuilt his 70 cm Yagi since returning from Christmas Island. After 15 minutes Rex told Nick it was taking longer than he expected and by this time signals had risen to 5/9 +10 on 2 m. Nick kept saying very firmly "hurry" while continuing to talk to Adrian VK2FZ and Jim VK3ZYC on 2 m. Another 15 mins went by and still no 70 cm antenna with Nick now yelling "hurry" as 2 m signals reached 40 over 9. Another 10 mins and the 70 cm Yagi was finished and a 5/9 70 cm contact completed for another VK7 record. Rex then asked Nick if he had 23 cm to which Nick replied he had a Yagi in the shed and could set it up on a pole outside. Nick was outside holding the antenna, leaning inside the window to tune the rig and while no contact was completed signals were copied each way on 23 cm at S2. All goes to show, one should have everything prepared in advance for the tropo season.

Nick comments that "Rex VK7MO blew me away when he came up on 2 m and we also had S9+ sigs on 70 cm". He also said that signals from VK4 were also evident, but he was concentrating on the rarer southern stations. The VK3RGI beacon was huge to him at times, audible over several hours. The beacon at Nimmitabel was also coming in well at times.

The busy times continued on 2 January. Enhanced tropo conditions across the south of the country had been evident from early in the morning with the Albany 70 cm beacon audible as far east as Melbourne and to Leigh VK2KRR. Unfortunately, the 2 m beacons at both Esperance and Albany were temporarily off-air. At 2350Z, Colin VK5DK in

Mount Gambier worked Wal VK6WG in Albany.

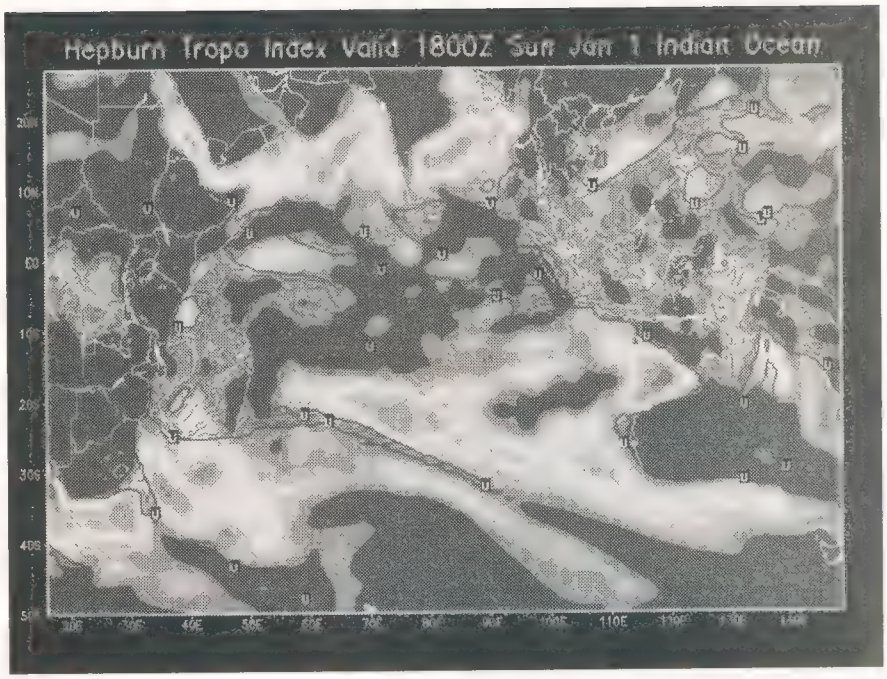
Then, at 0010Z, Leigh VK2KRR managed to work Wayne VK6JR near Busselton (south of Perth) on 144.1 over a distance of 2933 km. That distance exceeds both the current VK2 and VK6 records. Leigh and Wayne first made contact on 6 m, then Wayne put up a carrier on 2 m that Leigh was most surprised to hear. Wayne's 30 W and 9 elements received a 5/2 from Leigh while Leigh's 400W / 4x17 el gained a 5/5. Wayne then rapidly drove up to a nearby high point to try 70 cm, but no luck with that. Gary VK5ZK also managed to work Wayne – the path from Leigh to Wayne passing almost directly over Gary's QTH.

The Hepburn chart showed a straight line of tropo enhancement virtually from Leigh's front door to Wayne's QTH. However, looking at the Indian Ocean chart, it appears that the duct could have continued much further out across the ocean, almost to Mauritius. What chance a VK(2) to 3B8/9 (Mauritius) contact?

To add to the confusion, at the same time, a Sporadic E opening was in progress between VK2/3/5 and VK4 (Yeppoon and Charters Towers). The opening was fairly unusual in that enhancement would occur to a particular (very localised) location only for brief periods – almost like extended meteor scatter enhancement. Many stations reported hearing other stations calling, only for the enhancement to disappear before a contact could be made. Others, not too far away, would hear nothing.

Several theories have been put forward to explain the very sporadic nature of the enhancement. Ron VK3AFW wonders if meteors passing through the E layer were causing extended E's ionisation, but only for several minutes after the meteor had passed. Denis VK3ZUX noticed that on the Weatherzone site, there was a significant lightning storm in progress around the mid-north of NSW – at about the mid path of the enhancement. There is a theory that sprites rising upwards from a lightning storm into the E's region can cause short-term sporadic E enhancement.

On 10 January, a high-pressure cell caused significant tropo enhancement between VK5 and VK7. Brian VK5UBC reports that from his holiday house at Corny Point, he worked VK7YBI and VK7AC, both on the north coast of Tasmania.



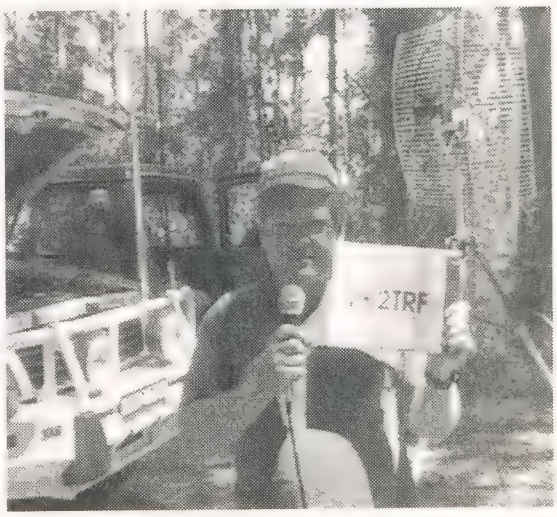
The Hepburn chart

New 2.4 GHz ATV record

ATV doesn't get much of a mention in this column, but it is alive and well in many areas of the country. Mark VK5EME has developed many easy-to-build kits that can get you onto ATV on any band from 70 cm to 10 GHz, relatively easily. Check out his web site for more details: www.minikits.com.au

Jack Swart VK2TRF reports that he worked Jonathan Berry VK2TAS on 18 December for a new ATV distance record for the 2.4 GHz band. Station locations were VK2TRF near Mt. Warrawolong, and VK2TAS at Mt. Gibraltar. The distance was 173.9 km.

"Both transmitters comprise G1MFG 2.4 GHz exciters driving ex-MMDS PA's producing upwards of 20 watts. The dishes are modified commercial wireless LAN antennas giving about 22dBi of gain. The receivers are standard G1MFG modules which are very sensitive but prone to interference on this band



from AV senders and wireless LAN systems. Mercifully we did not encounter any interference due to our remote location but Jonathon, perched right on top of Mittagong, suffered some.

We still managed 2-way colour QSOs with audio. Digital video tapes were recorded at both ends for later study. Dave VK2GIO received Jonathon VK2TAS signals from Mt Gibraltar but nothing was seen from Jack VK2TRF except by Jonathon on Mt Gibraltar.

Thanks to Dave VK2GIO and Rod VK2BQJ for their patience and help in this endeavour. Their skill and dedication to me (a newbie licensed since 24/12/04) is a great example of the amateur spirit. Also, many thanks to the Westlakes Radio Club for providing dedicated amateurs and their 4WD vehicles to enable us to access the remote location used. Amateurs involved at the Newcastle end were Jack VK2TRF, Dave VK2TDN, Steve VK2UD, Pete VK2YGM, Pete VK2TPW, Karen VK2ZKG and Matt VK2ZMT. Irene, VK2YGM's XYL, supplied a fantastic lunch for all.

Annual Grid Squares Table (AGT) Competition

Adam VK4CP – creator of the very useful VK-ZL Logger site (www. vklogger.com) has initiated a new competition in the hope of generating some greater activity on the VHF/UHF bands.

As many will be aware, there is an established Grid Square League Table, maintained by Guy VK2KU on behalf of the NSW VHF DX Group. This table is an on-going and cumulative record of the number of grid squares worked by the entrants on the VHF, UHF and microwave bands.

Adam has created an annual competition, where the slate is wiped clean at 000Z on 1 January each year. Apart from that difference, the rules are virtually identical to those for the Grid Square League Table. Adam's intention is simple - to stimulate activity by making everybody start on a level playing field each year.

Adam has created a web page for the competition – www.vklogger.com/agt. As of 13 January, 35 stations have already registered their tallies on the page. Full rules of the competition may also be found there.

Please send any Weak Signal reports to David VK3HZ at vk3hz@wia.org.au.

Digital DX Modes

Rex Moncur – VK7MO

Waldis, VK1WJ, and Graeme, VK3GOM, have been testing a number of digital modes for use on 2 metres via Aircraft Scatter between Bendigo and Canberra on signals too weak for SSB. The signals exhibit rapid fading that seems to result from interference between the signal scattered from the aircraft and tropospheric scatter. The choice of mode is a compromise between being fast enough to cope with the rapid fading while having sufficient sensitivity to take advantage of the weaker signals. Their experiments have concluded that the preferred mode is PSK63F.

Waldis has information on his web site (www.geocities.com/wilgonis/digiar.htm#AE2) on how to obtain the programs for various modes and the QSO procedures that are being used.

If you are interested and within Aircraft Scatter range of Canberra or Bendigo (900 km) you are welcome to contact either Waldis VK1WJ: ilgonis@netscape.net or Graeme VK3GOM: vk3gom@yahoo.com.au.

Please send any Digital DX Modes reports to Rex VK7MO at rmoncur@bigpond.net.au.

The Magic Band – 6 m DX

Brian Cleland – VK5UBC

December began with good openings on the 1st and 2nd down the eastern seaboard, including VK7 and northern Queensland. As well as the contacts between the eastern states, a good opening to JA occurred from VK3 and VK7 on 1st December with another opening from VK3 to JA on the 2nd. On 2nd December South Australia got into the act with openings to VK4 and VK2, and again on 3rd December. On the evening of the 2nd the band was still open from SA to Queensland at 11.00 pm and was again open at 8.00 am next morning, 3rd December. Jeff VK8GF at Alice Springs was active on the evening of the 2nd and worked many VK3 and VK5 stations. On the morning of 4th December the band opened between VK5 and ZL, and in the afternoon a brief opening occurred to JA with Brian VK5UBC working JA2DDN.

The first couple of weeks of December saw openings on most days but conditions were very unsettled and varied rapidly. A good opening did occur though from VK2 to VK5 on 7th December, which extended from VK2 to VK6 in the late afternoon and early evening.

On the afternoon of 13th December Col VK5RO and Brian VK5UBC had an interesting contact with Mike VK3BDL mobile on the Nullarbor Plains near Caiguna approx 500 km past the SA border who was driving to Perth to see the test cricket. Signals were 5/9 and they maintained contact for over an hour, including going to FM with again 5/9 signals. Mike was running 100 W to a vertical.

In the second half of December the band settled with good openings occurring on most days. VK4 seemed to get the best of conditions with openings to the south and VK5. The FK8 beacon

was audible on many days in this period in VK2, 3, 4 and 5 but unfortunately very few FK8 stations were heard or worked. Wayne VK4WS, who was portable at Nambour much of December, reports working Patrice FK8HA using an FT817 and a 5/8 2 m whip on 10th December with a 5/7 report. Wayne also worked Henri FK1TK on 20th December and Michel FK8GX on the 24th, both these contacts though with 100 W and an end-fed 6 m 1/2 wave vertical.

Good openings to ZL occurred on many days in December from all eastern states and VK5. As usual Norm VK3DUT worked ZLs on a regular basis but good openings extended to VK5 on 21st and 29th November and on 3rd, 13th, 14th and 26th December. VK2 had regular openings to ZL in December and VK4 got into the act on several occasions with John VK4FNQ at Charters Towers working ZLs on 17th and 21st December.

Good VK6 openings to VK4 happened on 30th December and 6th January with Wayne VK4WS working VK6RZ, AB, IP, JJ, RO, DU and HK.

Had a note from Bill VK3DOU who made his first VK6 contact with VK6IP using CW on 29th December. Well done Bill!

Had an interesting contact with VK7JG/m near Tomahawk on the north-east tip of Tasmania from my holiday QTH, Corny Point (PF85mc) on the 7th January, Joe's signal was 5/9+++ from his car.

As I reported in the December notes, the Barossa beacon VK5RBV on 50315 has been fully operational from early December. Reports have indicated that it is being well received all over Australia.

Please remember to send any 6 m information to Brian VK5UBC at bcleland@picknowl.com.au.

2 m and 70 cm FM DX

Leigh Rainbird - VK2KRR

A bit behind after the Christmas break, so this edition covers DX happenings from November and December. There was quite a bit of good DX over these months, but here is a compacted summary.

November was fairly quiet in most parts. A few tropo openings were reported in the country's SE and Queensland, but these were short lived and weak.

In December, the first real opening occurred on the 05/12 in the southeast. I was able to get to the majority of the Adelaide area repeaters such as Murray Bridge, Lobethal, Crafers, Barossa Valley, all around 750 km. I found I could also access Central North at 833 km, Port Pirie at 867 km and Cowell at 961 km.

From 10/12 to 15/12, good conditions were available in Queensland along the coast and ranges. Mike VK4MIK on the Atherton Tablelands, worked into Hodgson Range at 640 km, Blue Mountain at 581 km, Monto at 951 km, Mackay at 535 km, Hayman Is. at 451 km, Blackdown Tablelands. Felix VK4FUQ at Ingham has also been very active and working to similar locations as Mike.

A rare Sporadic E opening on the 15/12 saw 146 MHz signals pass between Alice Springs and areas of the south east. All contacts were on SSB, but I was able to work into the Alice Springs repeater on 146.950 VK8RCA. Signals had some bad QSB at times, but QSO were achievable. The distance to the repeater from here is 1804 km. I was able to work via the repeater with Jeff VK8GF mobile in Alice Springs, I could hear Jeff on reverse, and also Charlie VK8HW at Alice Springs who reported being able to hear me on reverse with his indoor dipole antenna. Unfortunately I could not hear him.

Again on Sporadic E, Felix VK4FUQ at Ingham got a rather sporadic 2m opening down the coast. Felix made it to the Glen Innes repeater on 146.950 VK2RNE. He made a brief contact with Mike VK2FMB in Glen Innes. Felix mentions that Garry VK4ABW also got into the same repeater from near Townsville.

While on a cruise on the "Pacific Sun" in mid December, Rob VK2MT encountered a major VHF opening between Noumea, where the ship was moored, back to VK2 and 4. Between a hilltop above Noumea and also on board the ship, using just his VX-7R handheld, he was able to access many VK2 and VK4 repeaters. At one stage, every repeater frequency from 6625 to 7100 returned one, if not two or three repeater tails when triggered.

Contacts were made via the following repeaters: VK4RAX Brisbane, VK4RSC Sunshine Coast, VK4RRC Redcliffe, VK4RGG Gold Coast and VK2RGL Great Lakes.

Stations contacted were VK4KOR, Spiro VK4IBR, June VK4SJ (M), Wayne VK4TWD, Bernard VK4KAC, Ray VK4YRS, Phil VK4KVK, Lee VK4KLA, Frank VK3DYE (P4), Greg VK4AML, Graham VK4JGH, Peter VK4TGV (M), Allan VK4HDM, Warwick VK4NW, Garry VK2UNI, Keith VK2AT and John VK2SWR. Signal strengths varied from S2 to S9, with some signals being saturation S30+, with many of these stations also being contacted via simplex.

The only thing that stopped more contacts was a flat battery, but that was after more than 2 hours of contacts.

Mpeg recordings were made on his digital camera of many of these contacts which helped with logging later on, plus to prove to the many doubters that these were genuine contacts. He has already e-mailed some of these recordings to those who have supplied their e-mail details.

The furthest repeater he heard and was able to partially access was his home repeater VK2RMP at Wollongong. Unfortunately, no contact was made. Distances achieved varied from 1475 km through to 2056 km.

He also notes that the FK8ZHA 2m repeater appears to require audio to access, not just carrier.

Big tropo opening in the SE on the 19/12. Very big signals from the areas surrounding Adelaide. Full scale signals from the main repeaters at 750 km. Worked VK5PO at 5/9+50 dB signal from Eden Valley 738 km on 146.500. Brian VK5UBC was able to access Macedon, Bendigo, Shepparton, Canberra, Ararat and Grampians.

On the 30/12, Felix VK4FUQ worked into the Newcastle repeater and spoke to VK2FA. Signals were weak to S5 with QSB. The Sporadic E only lasted for around 20 mins.

There is DX out there for those that want it. Have fun.

Please remember to send through any 2 and 70 FM DX reports to Leigh VK2KRR at vk2krr@wia.org.au

HF Predictions

by Evan Jarman VK3ANI
34 Alandale Court Blackburn Vic 3130

February 2006
T index: 16

Legend

Frequency scale: UD, F-MUF, OWF, E-MUF, ALF, >10%, >50%, >90%

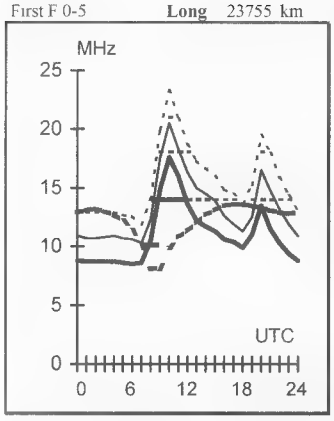
Time Scale

These graphs show the predicted diurnal variation of key frequencies for the nominated circuits.
These frequencies as identified in the legend are:-

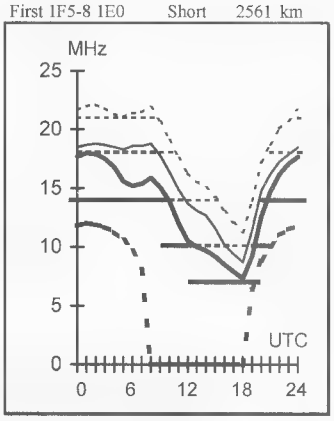
- Upper Decile (F-layer)
- F-layer Maximum Usable Frequency
- E-layer Maximum Usable Frequency
- Optimum Working Frequency (F-layer)
- Absorption Limiting Frequency (D region)

Shown hourly are the highest frequency amateur bands in ranges between these key frequencies, when usable. The path, propagation mode and Australian terminal bearing are also given for each circuit.
These predictions were made with the Ionospheric Prediction Service program: ASAPS Version 4

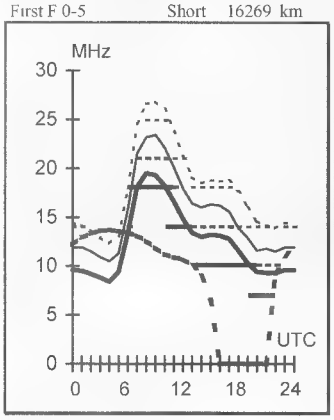
Adelaide-London 132
First F 0-5 **Long** 23755 km



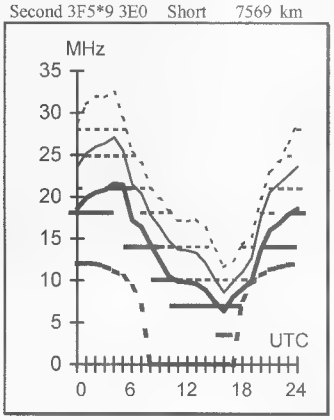
Brisbane-Dunedin 148
First 1F5-8 1E0 Short 2561 km



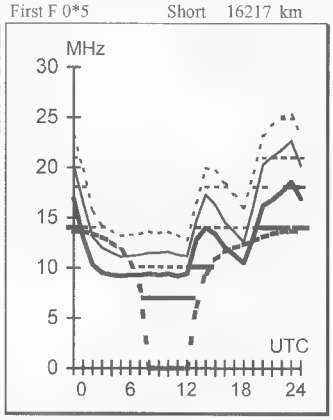
Adelaide-London 312
First F 0-5 Short 16269 km



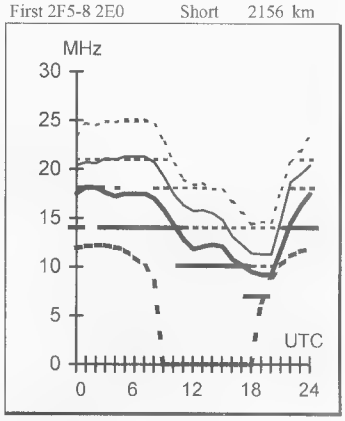
Brisbane-Honolulu 49
Second 3F5*9 3E0 Short 7569 km



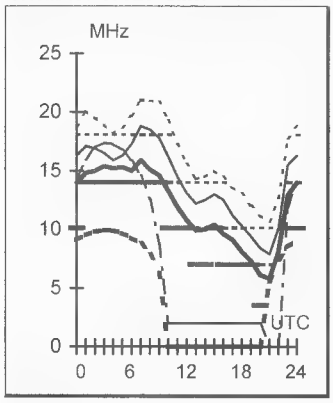
Canberra-New York 68
First F 0*5 Short 16217 km



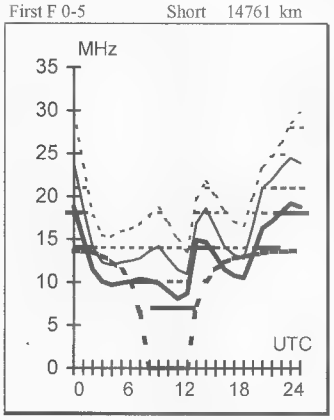
Darwin-Auckland 130
First 2F5-8 2E0 Short 2156 km



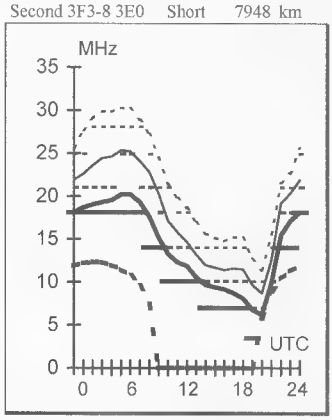
Adelaide-Manilla 338
Second 3F9-16 3E1 Short 5813 km



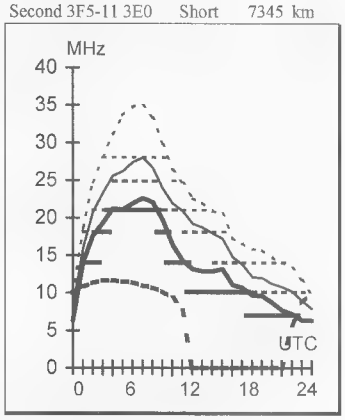
Brisbane-Miami 79
First F 0-5 Short 14761 km



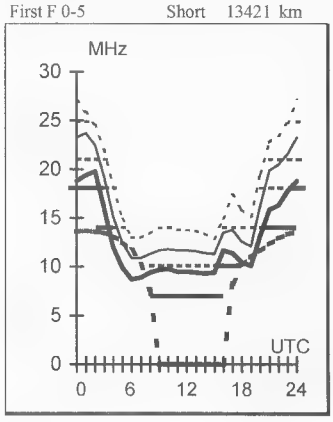
Canberra-Tokyo 352
Second 3F3-8 3E0 Short 7948 km



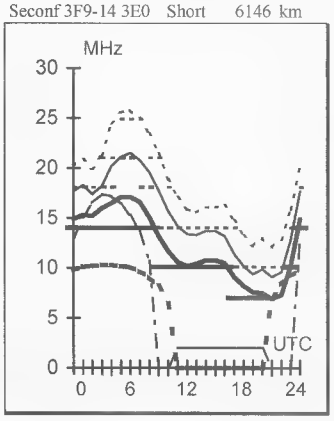
Darwin-New Delhi 309
Second 3F5-11 3E0 Short 7345 km



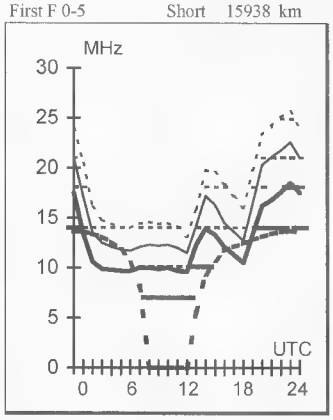
Adelaide-Vancouver 59
First F 0-5 Short 13421 km



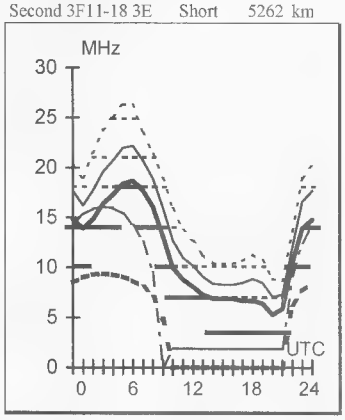
Brisbane-Singapore 295
Seconf 3F9-14 3E0 Short 6146 km



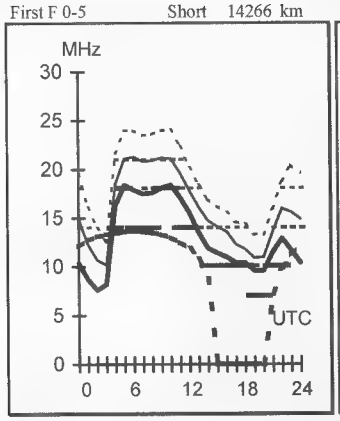
Canberra-Washington 70
First F 0-5 Short 15938 km



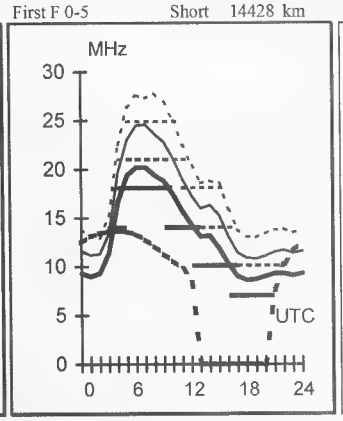
Darwin-Osaka 5
Second 3F11-18 3E Short 5262 km



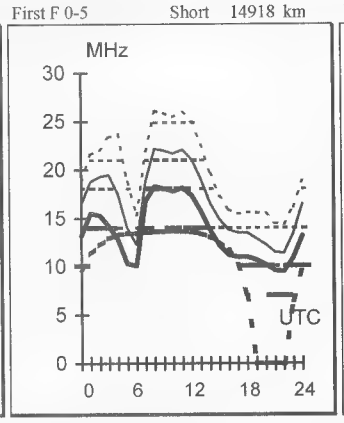
Hobart-Cairo 278
First F 0-5 Short 14266 km



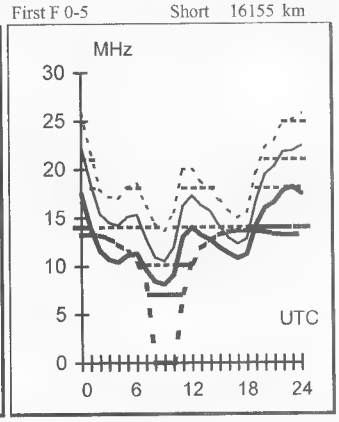
Melbourne-Moscow 316
First F 0-5 Short 14428 km



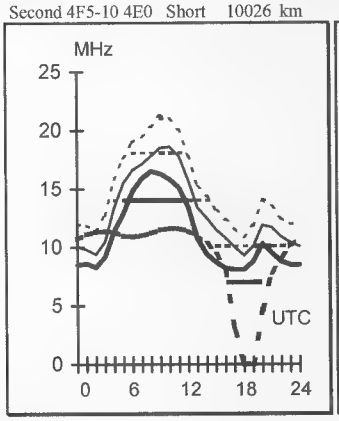
Perth-Dakar 259
First F 0-5 Short 14918 km



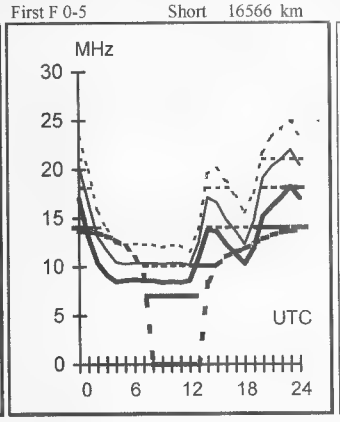
Sydney-Barbados 119
First F 0-5 Short 16155 km



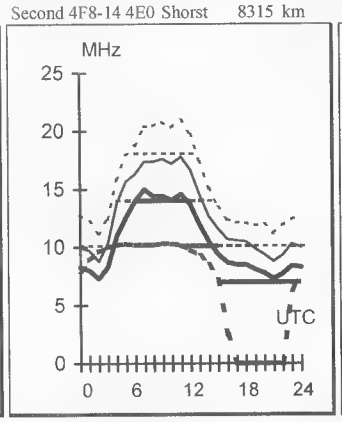
Hobart-Capetown 220
Second 4F5-10 4E0 Short 10026 km



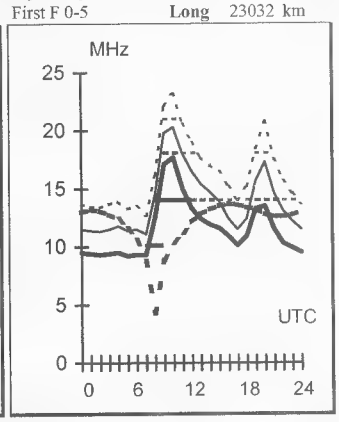
Melbourne-Ottawa 63
First F 0-5 Short 16566 km



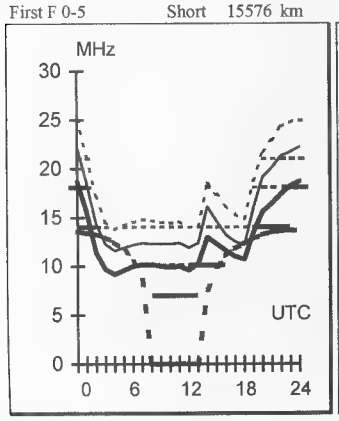
Perth-Johannesburg 248
Second 4F8-14 4E0 Shorst 8315 km



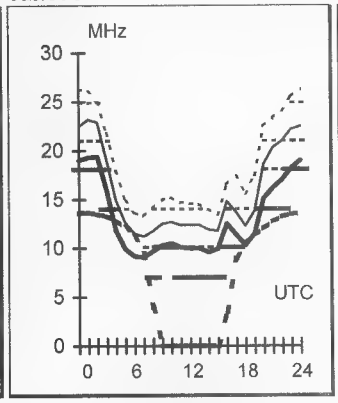
Sydney-London 139
First F 0-5 Long 23032 km



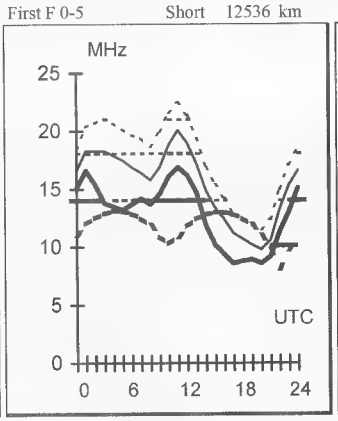
Hobart-Chicago 72
First F 0-5 Short 15576 km



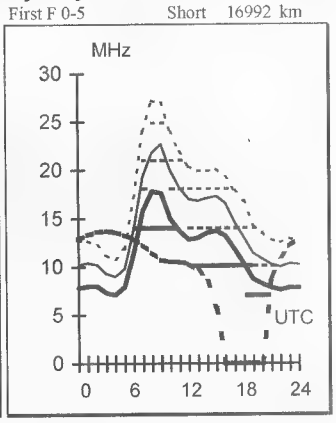
Melbourne-Seattle 50
First f 0-5 Short 13178 km



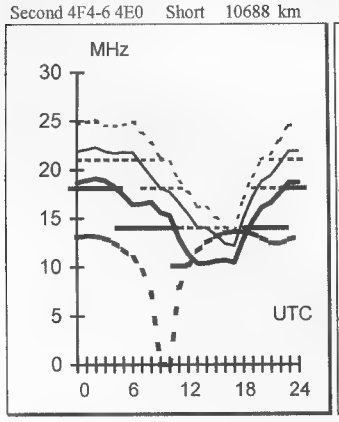
Perth-Montevideo 187
First F 0-5 Short 12536 km



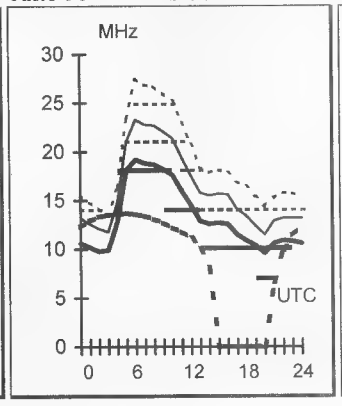
Sydney-London 319
First F 0-5 Short 16992 km



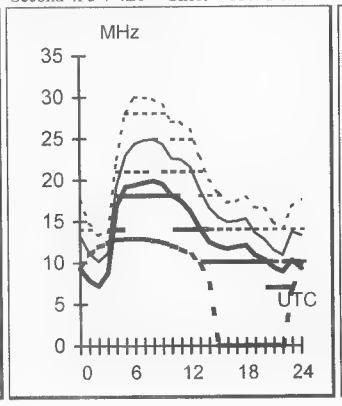
Hobart-Santiago 149
Second 4F4-6 4E0 Short 10688 km



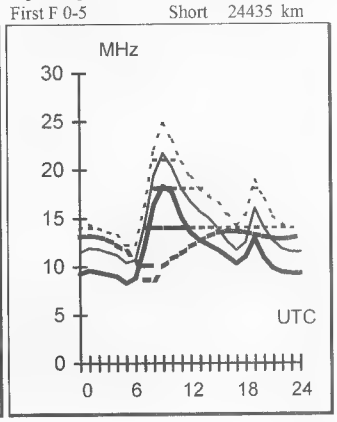
Melbourne-Sofia 296
First F 0-5 Short 15132 km



Perth-Tel Aviv 302
Second 4F3-7 4E0 Short 11091 km



Sydney-Warsaw 133
First F 0-5 Short 24435 km



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WANTED QLD

•**Australian official Radio Service Manual Volume 13**, Year 1954. Will pay all costs and postage. Frederick (Eric) VK4ZAJ QTHR, Phone 07 3359 9424.

•**Set of ICOM rack mounting handles**, with or without screws. Happy to pay good price. Ron VK4QM QTHR Phone 07 5488 0268, email jvette@bigpond.net.au.

•**Circuit diagrams for KLB1100 and KLB300 solid state amplifiers**. Both were made in Japan but no further information on same. I would appreciate any info especially circuit diagrams. All expenses refunded. VK4DV QTHR

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•**Antennas for mobiles**, ground, independent and elevated feed types. Bruce VK5VK 08 8298 3906.

•**Aerial analyser** to design by Jim VK5JST. Complete and working. Measures SWR, resistance and reactance over frequency range, 1.3 to 31 MHz. Assembled from Elizabeth Amateur Radio Club kit, $200 incl. P&P. Phone 08 8280 7430 Keith VK5OQ QTHR.

WANTED SA

•**Technical information on AWA Teleradios from the 1950s onwards**, particularly type 65, 80, 90, 215/220 and SS220, 235 sets. A photo of the type 80 needed. M Haskard VK5BA QTHR; Ph/fax 08 8280 7192; mhaskard@chariot.net.au

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- Deceased estates Hamads will be published in full, even if the ad is not fully radio equipment.
- WIA policy recommends that the serial number of all equipment for sale should be included.
- QTHR means the address is correct in the current WIA Call Book.
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- Commercial advertising (Trade Hamads) are prepayable at $25.00 for four lines (twenty words), plus $2.25 per line (or part thereof), Forty word maximum, minimum charge of $25.00. Cheques are to be made out to: WIA Hamads.
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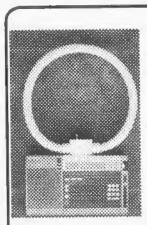

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VK5 South Australia and Northern Territory VK5OV David Box VK5APR Peter Reichelt VK5ATQ Trevor Quick	Phone 08 8294 2992 boxesdnm@lm.net.au peter.reichelt@bigpond.com vk5advisory@wia.org.au	VK5WI: 1843 kHz AM, 3.550 MHz LSB, 7.095 AM, 14.175 USB, 28.470 USB, 53.100 FM, 147.000 FM Adelaide, 146.800 FM Mildura, 146.900 FM South East, 146.925 FM Central North, 438.475 FM Adelaide North, ATV Ch 35 579.250 Adelaide. (NT) 3.555 LSB, 7.065 LSB, 10.125 USB, 146.700 FM, 0900 hrs Sunday. The repeat of the broadcast occurs Monday Nights at 1930hrs on 3585kHz and 146.675 MHz FM. The broadcast is available in 'Realaudio' format from the website at www.sant.wia.org.au Broadcast Page area.
VK6 Western Australia VK6NE Neil Penfold VK6XV Roy Watkins VK6OO Bruce Hedland-Thomas	Phone 08 9351 8873 http://www.vk6.net/ vk6advisory@wia.org.au vk6ne@upnaway.com vk6xv@bigpond.net.au	VK6WIA: 146.700 FM(R) Perth at 0930hrs Sunday relayed on 1.865, 3.564, 7.075, 10.125, 14.116, 14.175, 21.185, 29.120 FM, 50.150 and 438.525 MHz, Country relays 3.582, 147.200 (R) Cataby, 147.350 (R) Busselton, 146.900 (R) Mt William (Bunbury).147.000 (R) Katanning and 147.250 (R) Mt Saddleback. Broadcast repeated on 146.700 at 1900 hrs Sunday relayed on 1.865, 3.564 and 438.525 MHz : country relays on 146.900,147.000, 147.200, 147.250 and 147.350 MHz..Also in "Realaudio" format from the VK6 WIA website
VK7 Tasmania VK7ZAX Phil Corby VK7DG Dale Barnes VK7KK Reg Emmett	Phone 03 6234 3553 vk7advisory@wia.org.au phil.corby@tassie.net.au vk7dg@wia.org.au regemm@ozemail.com.au	VK1WIA Sunday 9am on VK7WI network: 3.570MHz LSB, 146.700 MHz FM (VK7RHT South), 53.825MHZ FM (VK7RAD South), 147.000MHz FM (VK7RAA North), 146.750 FM & 53.825MHz (VK7RNW North West), 146.625 MHz FM (VK7RMD North West), UHF CB Channel 15 (Hobart) and 27MHz CB - 27.225MHz LSB (Hobart). Followed at 9:30am with VK7 Regional News Broadcast also on 7.090MHz LSB & 14.130MHz USB

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1. Only three members of the state advisory committees are listed.
2. All listings are preliminary. They will be updated each month as required.
3. Membership application forms are available from the WIA web site www.wia.org.au or the national office address above.

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Mick Ampt VK3CH

Janice Ampt VK3FIRE, Australia's youngest radio amateur

A nine-year-old girl has become the youngest to qualify for an Australian amateur radio licence and has thanked her father, Mike VK3CH, and grandfather Ian Ampt VK3IV, QTH of Horsham, and everyone else involved in her success.

Janice attended the training by Fred Swainston, VK3DAC, and assessment session conducted by Melbourne's North East Radio Group (NERG). On her first attempt at the written assessment, she narrowly missed a pass mark. Following feed-back from the assessor, John Weir VK3ZRV, and further study, she succeeded on her second attempt on 16/12/05 at the combined regulations and theory written test. She now has the callsign of VK3FIRE.

The new entry level Foundation licence was introduced in October 2005. Before that, the youngest to qualify for any VK licence were 11-year old males and a 12-year old female. Janice is already undertaking study to obtain her Marine Radio Operator's Certificate of Proficiency (MROCP) and the Amateur Radio Operators Standard licence. With the practical operating experience she has to date, all she is waiting for now is for the ACMA to write up the "Standard licence" exams! She has also expressed an interest in learning Morse code, the speed as yet undecided.

For Christmas presents last year, Janice gave copies of the Foundation Licence Manual to her uncles, Ben, John and Peter.

Nikolaas Dimitrijevic VK3FNIK, Australia's 2nd youngest radio amateur

Nikolaas, 10 year old son of long time club member Chris VK3FY, has also joined the ranks of those obtaining their amateur radio licence under the new entry level Foundation licence. Nikolaas attended a training session at Amateur Radio Victoria and NERG club and did his exams at Box Hill with Amateur Radio Victoria. Dad Chris is very pleased and proud of the achievement and no doubt has a room full of gear for Nikolaas to take his pick from. But Nikolaas is smart – he has already put the 'hard word' on the OM to get him a new Icom IC-7000!

This is a great start for WANSARC* in the New Year to have the two youngest licensed amateur operators in VK. As both studied together for a while, they have a friendship that can continue 'on air' and have a peer to hone their 'on air' operating skills and then progress to the wider amateur community.

Wonder how long until Dad takes Nikolaas to some rare DX island for some serious contesting. Looks like we have some extra 'hands on deck' for the WANSARC* JMFD this year!

* Western and Northern Suburbs Amateur Radio Club (IIRC) (WANSARC) is based in Melbourne's- northern suburbs.

Just starting out...

Merv Collins VK3AFO took this photograph of his grandson Andrew Collins listening to his first Crystal Set.

At the age of nine, Andrew is showing great interest in amateur radio as a keen SWL, regularly monitoring his grandfather's 40 m contacts at his home in Canberra.

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